MODEL 500

MODULAR MOWER SHARPENING SYSTEM

Patent No. 5,321,912

Please complete the following:

Serial # _____

Date Purchased _____

Purchased From _____

Phone # _____

Neary Technologies
1173 Benson Street
River Falls, WI 54022

Manual No. 50300 (3-01)

Thank you for choosing Neary Technologies as your supplier of sharpening equipment. Neary Technologies machinery is for sharpening reel and rotary mower blades and bedknives. It is our goal to provide equipment that makes your job easier. Please read the manual for information regarding safety, set up and proper operation of this equipment. In the future it may be necessary to order service parts for this machine. Please record the serial number and purchase information on this page as ready reference when ordering parts.

Warranty Registration, please complete the warranty registration included with this manual and return it to the factory. We use these records to advise you of additional information about this machine as well as for tracking warranty information.

Model 500

The Model 500 is a modular design offered with several levels of features as well as different electrical voltages. This manual addresses the entire family of Models:

500S, Sprin Grind Only, 110V 60Hz
501S, Spin Grind Only, 220V 50Hz or 60Hz
500SR, Spin and Relief Grind, 110V 60Hz
501SR, Spin and Relief Grind, 220V 50Hz

Model Number _____

Serial Number _____

Purchase Date _____

Purchased From _____

Address _____

City, State, Zip Code _____

Phone & Fax # _____

Contact _____

TABLE OF CONTENTS

WARNING

Whenever operating equipment, the operator should always use safe operating procedures. Throughout the manual you'll see the Neary Technologies warning sign. These warning signs should be strictly adhered to before proceeding with the operations.

1. **KEEPS GUARD IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** All visitors should be kept a safe distance from work area.
6. **MAKE WORKSHOP KID-PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** Wear no loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. **ALWAYS USE SAFETY GLASSES, HEARING AND RESPIRATOR EQUIPMENT.** Also use face, dust mask and hearing equipment if cutting operation is dusty and noisy. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
11. **SECURE WORK.** Use clamps or vise to hold work when practical. It's safer and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
14. **DISCONNECT TOOLS** before servicing; when changing accessories, such as blades, bits, wheels, and the like.
15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
16. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to person.
17. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the Grinding Equipment is unintentionally contacted.
18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function—check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
19. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
20. **KNOW YOUR POWER TOOL.** Read the owner's manual carefully. Learn the application and limitations as well as specific potential hazards peculiar to this tool.

ASSEMBLY INSTRUCTIONS

RECEIVING SHIPMENT

Inspect the crate for damage during shipment. If problems occur refer to the Shipping and Receiving Instructions on the previous page.

SITE SELECTION

Review the drawing to the right and place your grinder in a location with adequate floor and operator areas. The area chosen should be well lit and reasonably level. Identify the operator's position and which ends are referred to as left and right. The rest of the instructions will note directions as viewed from the operator's position in front of the unit. (See FIG. 1)

UNPACK GRINDER

Your unit was totally assembled at the factory and partially disassembled for safe shipment. Remove your grinder from the crate by disassembling the crate with a hammer and crow bar. If any evidence of damage to the grinding wheels, please refer to the Shipping & Receiving instructions.

Cut the straps with a scissors that hold the miscellaneous items to the floor of the crate.

Unpack the cartons and place items on a bench in an organized manner.

PACKING LIST

Review the Packing List in FIG. 2. If any items are missing from the shipment refer to the Shipping and Receiving Instructions on the previous page.

LEVELING UNIT

Position the machine in an area where it will not have to be moved and is not subjected to "bumping" by other equipment or machinery. Efforts should be made to locate the unit on a reasonably level surface and, if necessary, shims placed under the unit to prevent rocking. It is not critical that the machine be absolutely level or that it be fastened to the floor. If you do elect to fasten the unit to the floor, caution should be exercised to avoid twisting the machine when anchoring it to the floor.

TOOLS NEEDED FOR ASSEMBLY

Hammer
Crow Bar
Scissors or Knife
Dry Spray Lubricant
1/2" Wrench
Pliers
Flathead Screwdriver

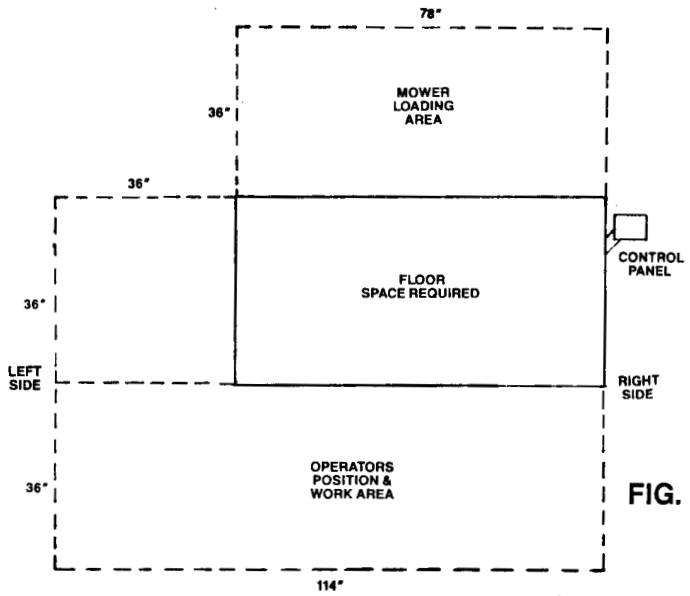


FIG. 1

PACKING LIST

Part No. & Description	500S	500SR
09877 ..... Small Hex Key Set	1	1
09789 ..... Large Hex Key Set	1	1
50300 ..... Manual	1	1
50014 ..... Wrench for Wheel Hubs	1	1
50081 ..... Eccentric Pins for 55117	3	3
50505 ..... Front Roller Kit	1	1
50523 ..... Taper Checker	1	1
50541 ..... Shaft Drive Adapter, Male	1	1
50542 ..... Shaft Drive Adapter, Female	1	1
55117 ..... Drive Plate	1	1
55509 ..... Table Mount Diamond Dresser	1	1
09735 ..... Knob		1

Optional

05710 ..... Grinding Wheel, spare
05711 ..... Relief Grinding Wheel, spare
09816 ..... Mounting Rod for Jacobson Greensking 22-1/4"
10504 ..... Elevator
50129 ..... Ransomes Drive Adapter
50171 ..... John Deere Fairway Adapter
50176 ..... Toro Turf Pro 84 Adapter
50900 ..... Equipment Cover
55506 ..... Reel Mounting Kit
55528 ..... Enclosure
55577 ..... Dust Collection System
55903 ..... Lift Table

ASSEMBLY INSTRUCTIONS

MOUNT OPTIONAL
ELEVATOR WINCH ASSEMBLY -- #50104

Spray a dry lubricant or WD-40, onot the Top 4 to 5 inches of the elevatro shaft base. (See FIG. 3)

Mount the pre-assembled elevator winch assembly onto the elevator shaft base. (See FIG. 4)

NOTE: If you purchased the optional elevator winch assembly at another time, then mount the elevator shaft base to the left side frome with the supplied angle brackets and hardware provided.

Mount the chain and bar assembly onto the end of the cable. (See FIG. 4)

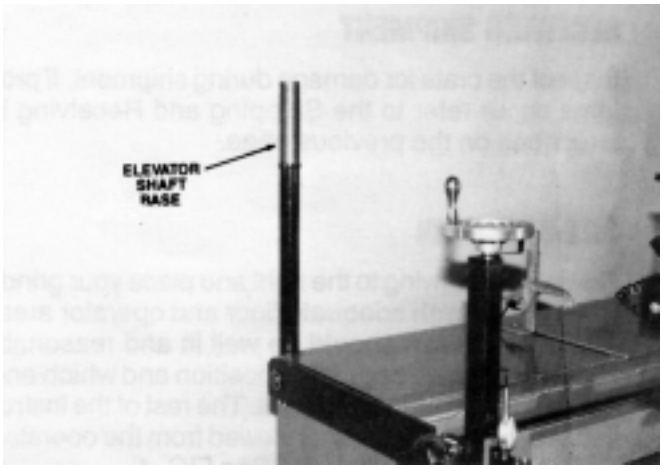


FIG. 3

ELECTRICAL REQUIREMENTS

The unit has be prewired at the factory and no additional wiring is needed.

The unit requires a standard grounded 115V 20 amp circuit for operation. Your outlet and plug should look like the dawings in FIG. 5 & 6.

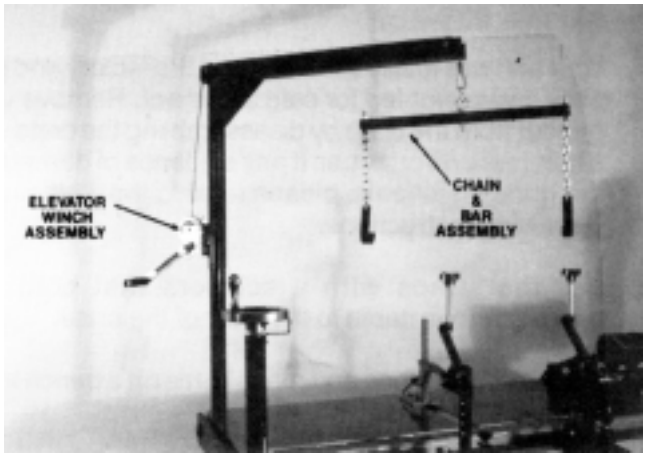


FIG. 4

WARNING

Your grinder must always be connected to a properly grounded circuit. DO NOT run the unit on a long extension cord. An improperly grounded grinder can cause an electrical shock and in turn serious injurty to the operator. If necessary, contact a qualified electricaian to insure your unit is properly grounded.

Your unit is now fully assembled and ready for operation. However, before operating your unit, review the following specifications pages and familiarize yourself with the working parts of the grinder.

115 Volts 20 AMP Circuit
12 Guage Wire Mininmum

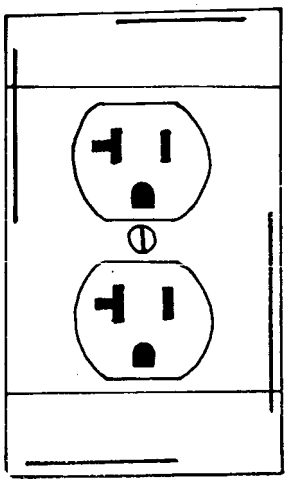
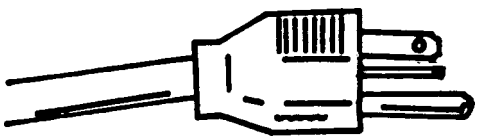


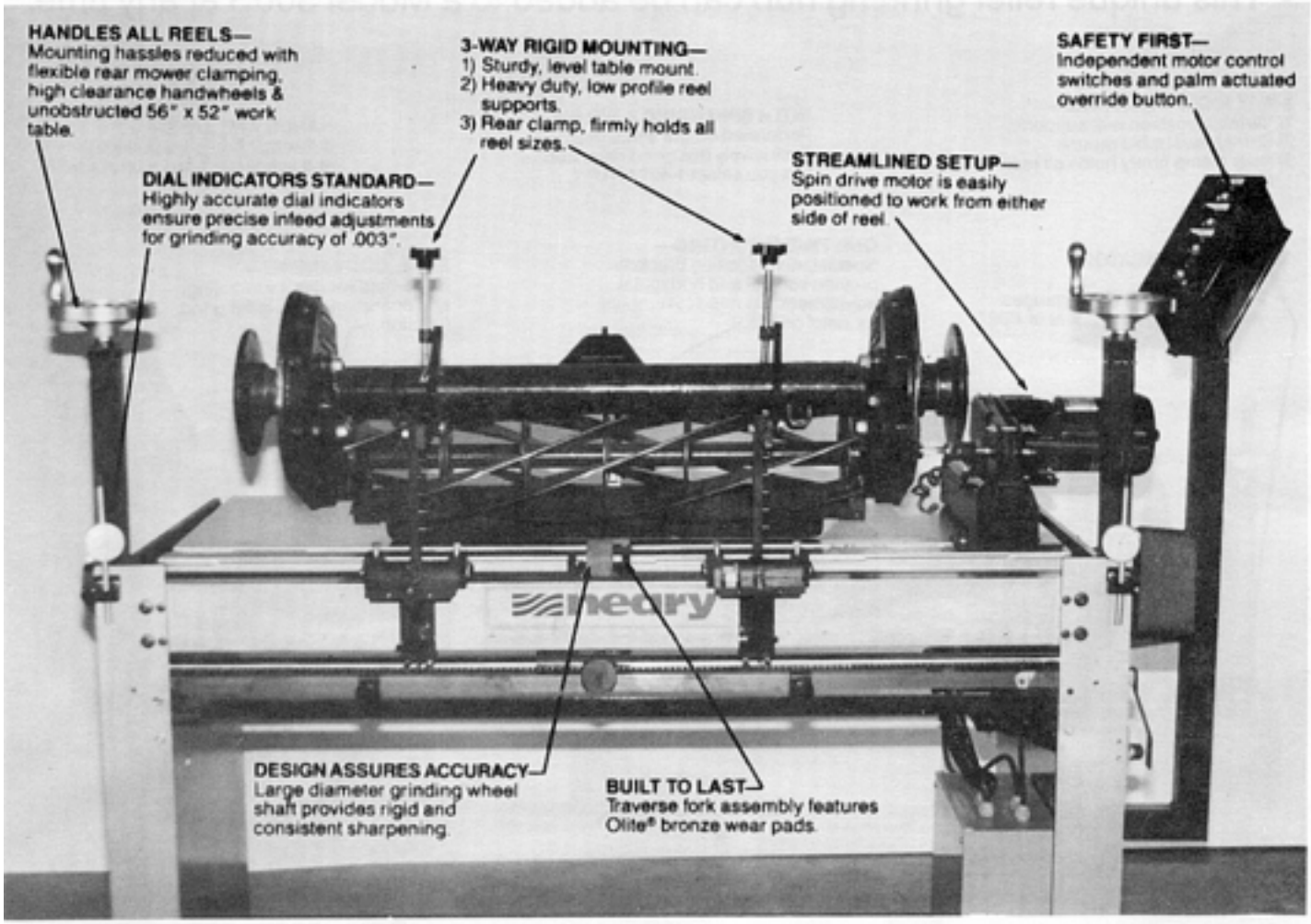
FIG. 6



MACHINE SPECIFICATIONS

500S SPIN GRINDER

- 500S offers 3-way rigid mounting.
- Streamlined mower setups.
- True cylinder sharpening.



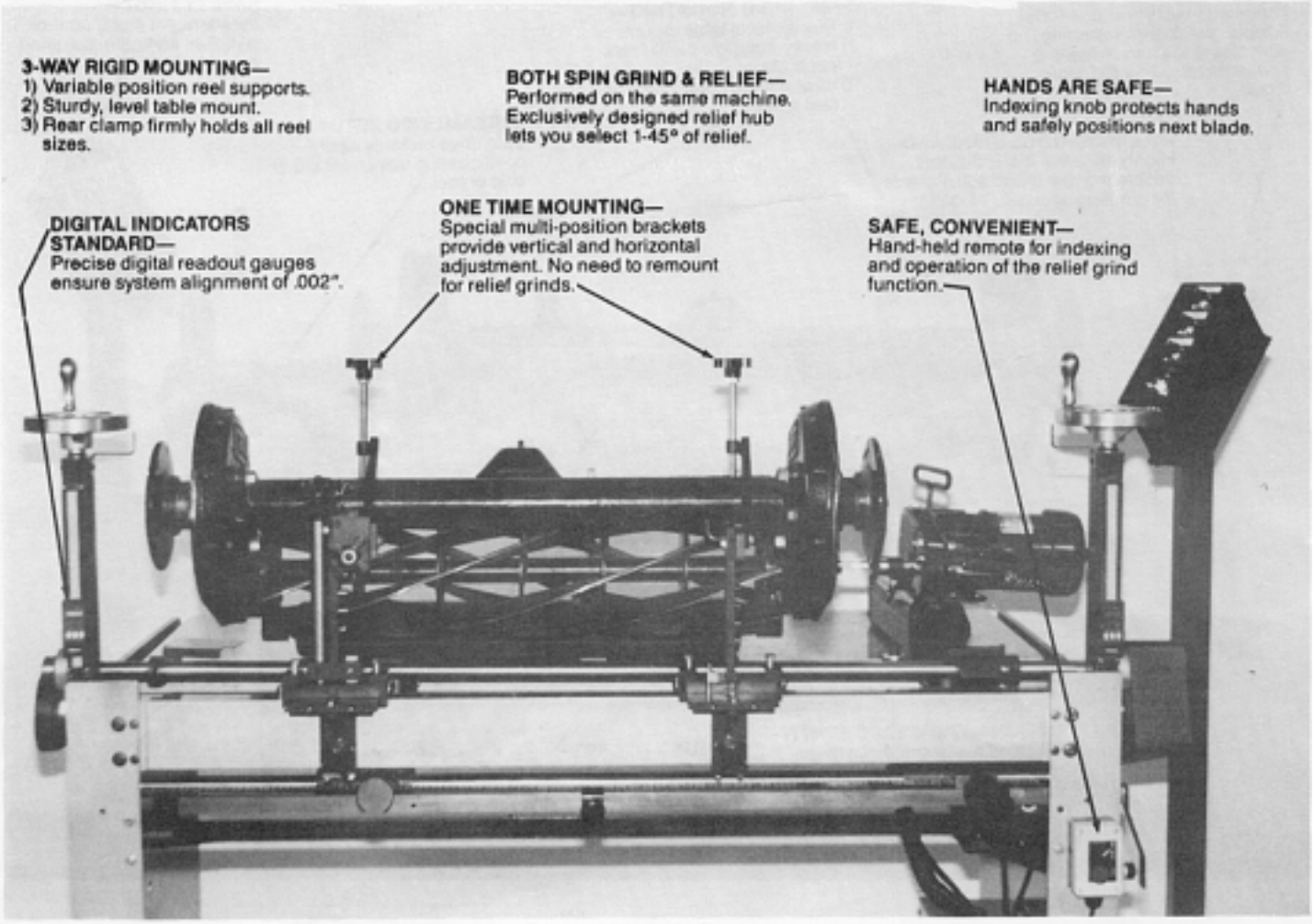
MODEL 500S SPECIFICATIONS

Weight	930 lbs.
L x W x H	80"L x 36"W x 57"H
Work Table	56" x 19½" x 33½"
Spin Motor	1/6 horsepower totally enclosed fan cooled gearmotor
Traverse Motor	1/15 horsepower totally enclosed fan cooled gearmotor
Grind Motor	1 horsepower, 3450 rpm totally enclosed motor
Electrics	115V, 60 Hz, 1Ph
Base	1/2" and 1/4" steel
Optional Pivoting Winch Capacity	800 lbs.
Grinding Wheel	6" diameter x 1-1/2" wide

MACHINE SPECIFICATIONS

500SR SPIN/RELIEF GRINDER

- The 500SR features adjustable 1-45° relief grinding. A relief angle reduces drag between reel and bed knife.
- The 500 SR utilizes the same rigid shaft design proven successful for twenty years.
- This unique relief grinding hub can be added to a Model 500S at any time.



MODEL 500SR SPECIFICATIONS

Weight	1000 lbs.
L x W x H	80"L x 36"W x 57"H
Work Table	56" x 19½" x 33½"
Spin Motor	1/6 horsepower totally enclosed fan cooled gearmotor
Traverse Motor	1/15 horsepower totally enclosed fan cooled gearmotor
Grind Motor	1 horsepower, 3450 rpm totally enclosed motor
Electrics	115V, 60 Hz, 1Ph
Base	1/2" and 1/4" steel
Optional Pivoting Winch Capacity	800 lbs
Grinding Wheel	6" diameter x 1-1/2" wide
Relief Grinding Wheel	6" diameter x 1/2" wide

OPERATING SECTION

PLEASE READ THE FOLLOWING INFORMATION ON THIS PAGE BEFORE PROCEEDING ON WITH THE OPERATING SECTION.

Because of the unique modular design of the 500 Series grinders, the operating instructions of the 500 and 500SR are combined together on the following pages. This may be a little confusing to follow at first, but as you upgrade from a 500S to 500SR, you will begin to appreciate why we have combined instructions into one manual. You won't have to start from scratch and learn "new" equipment in a "new" operating manual. You will just come back to your basic set of instructions and build on what you already have learned.

The most important part of this manual is the next five pages. Basic spin and relief grinding operations are very simple on Neary Technologies equipment. So the most important task at hand is to familiarize yourself with the controls and switches on your model of grinder. You are encouraged to turn on the controls and view its operation, and in no time you will be grinding with ease!

Service and training are very important to us at Neary Technologies. Please call with questions or comments. Thanks for buying our equipment and we look forward to working with you in the years ahead.

OPERATING INSTRUCTIONS

INTRODUCTION TO SPIN & RELIEF GRINDING

A correctly ground and maintained reel is cylindrical in shape, meaning that all reel blades are the same distance from the reel shaft. If a reel unit has been improperly ground or maintained, a conical shape can appear. (See FIG. 20)

Spin grinding removes the conical shape and restores the reel back to a sharp cylindrical shape with all blade cutting edges ground to the same distance from the reel shaft. (See FIG. 21)

RELIEF GRINDING

Relief grinding removes the excess steel behind the cutting edge (particularly on thick or heavy bladed reels) to allow the reel to operate with less wear and tear on its cutting surface and to mow with less power consumption by the mower. (See FIG. 22)

WHY REELS LOOSE THEIR CYLINDRICAL SHAPE

To realize the significance of our revolutionary new grinders, we must remind ourselves of the basic principles that let reel mowers produce a superior cut. When sharpened blades and bed knife are properly aligned, the shearing action creates a clean, even quality cut.

When manufactured, mower reels are ground to be perfect cylinders. The diameter at all points is equal. The bed knife is mounted so it is perfectly parallel to the blade surface across the full width of the mower. When the blades and knife are properly aligned the best cut is obtained.

Usually two things happen to cause a reel to loose its shape and become tapered.

First, most cutting units require that field adjustments be made to keep reel and bedknife in the best cutting proximity. Excessive adjustment on one side causes the reel blades on that side to wear faster. Repetition of the overadjustment actually compounds the problem. The reel looses its cylindrical shape and becomes tapered.

The second reason reels loose their cylindrical shape is traced to the very nature of the reels themselves. The natural helix (or twist) in the reel blades causes the "lead in" end of the reel to wear faster. The diameter at that end becomes smaller. Each time you adjust the mower, the accelerated wear continues and the "lead in" diameter becomes even smaller.

If you use the simple "touch method" of alignment for sharpening, where you contact each end of the reel with the grinding wheel, the reel's conical or tapered condition is not corrected and the reel is not restored to a true cylinder. The difference between the two ends continues to increase, and eventually the taper exceeds the mower's range of adjustment.

CONE SHAPED REEL

CAUSED BY INCORRECT ADJUSTMENT OR GRINDING

FIG. 20

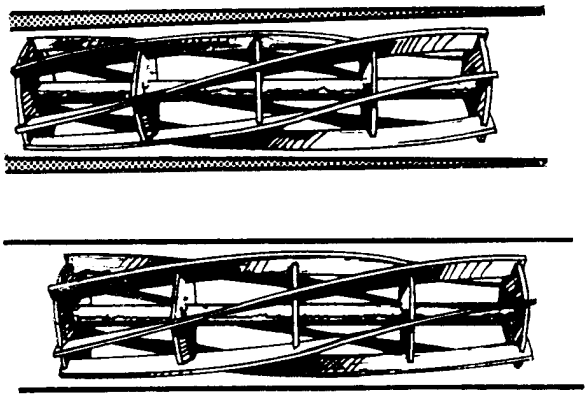


FIG. 21

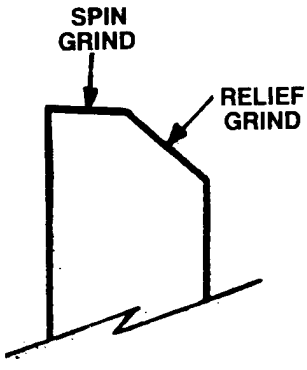


FIG. 22

INTRODUCTION TO SPIN & RELIEF GRINDING—cont.

To a limit, the bearings on most mowers are built to withstand the twisting stress that constant misalignment causes. Some mowers provide you enough adjustment to keep the bed knife position for a cut of passing quality. But the longer this condition continues, the faster the bearings deteriorate. Bed knife wear accelerates and the quality of cut noticeably deteriorates.

THE GRINDING WHEELS

The 500 Series grinders are supplied with specially made factory installed medium grit aluminum oxide grinding wheels (Part Nos. 5710 and 5711) for both spin and relief grinding. See wheel selection listed on page 11.

Periodic light dressing with a dressing stick (Part No. 1740) or with a diamond dresser (Part No. 9702) during the grinding process is required. (See FIG. 23 & 24) This will clean out the pores on the grinding wheel surface. A wheel that is loaded and needs dressing tends to remove less material, and remove it at a slower rate, plus it has a tendency to overheat the reel blade edge.

A diamond dresser attachment No. 55509 (FIG. 25) is an option for the 500S and the 500 SR. It is mounted to the machine as shown in FIG. 25.

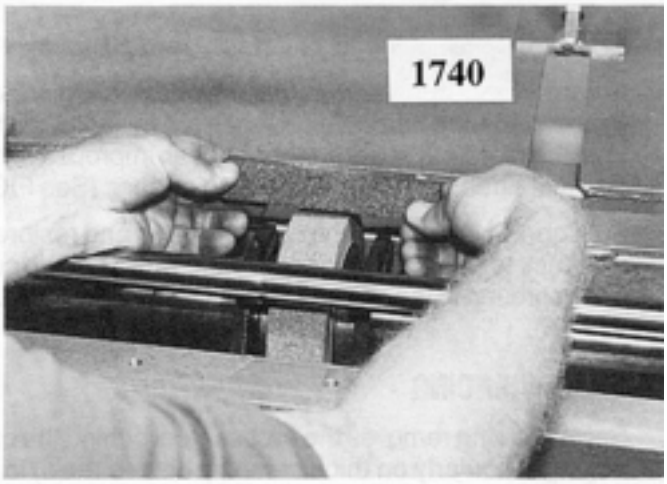


FIG. 23

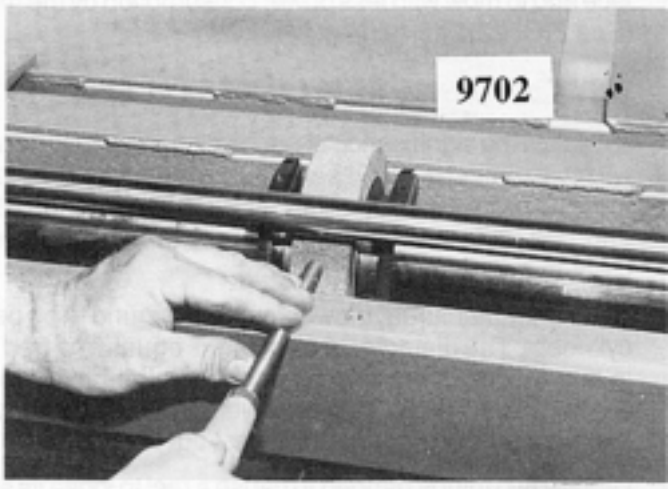


FIG. 24

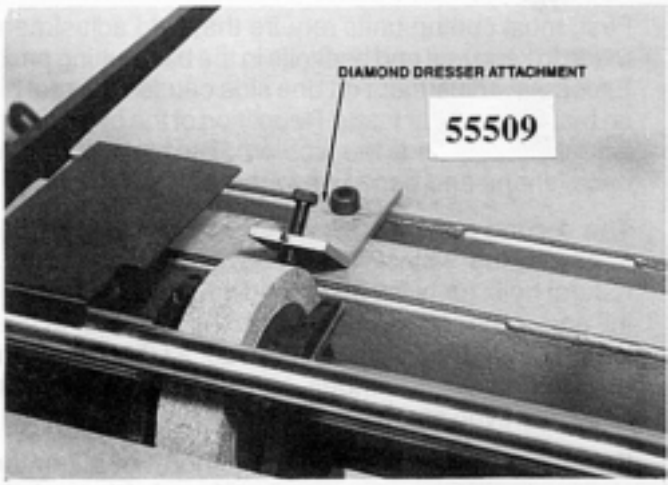


FIG. 25

OPERATING CONTROLS

REVIEW SPECIFICATIONS PAGE

Review the preceding specifications pages and familiarize yourself with the working parts of the grinder before proceeding.

If your unit is a 500ASR, please proceed to page 19.

500S or 500SR CONTROL BOX FUNCTIONS

Review the following specifications for your particular model and learn the appropriate function of each control box switch. As you read and learn about each switch you are encouraged to turn that switch on and view that particular operation. (See FIG. 26 & FIG. 27)

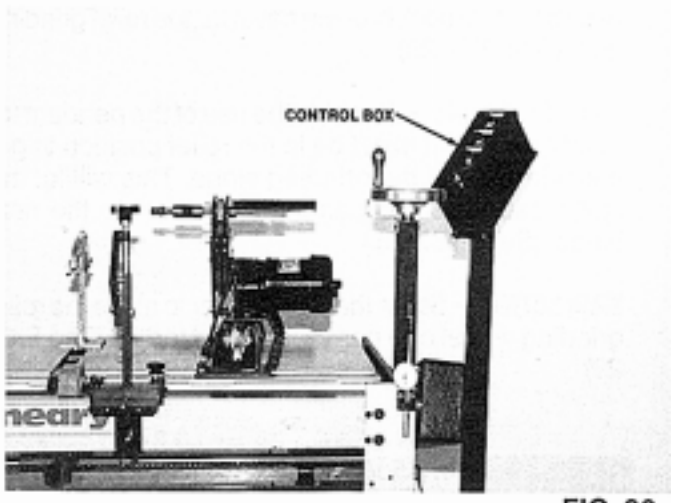


FIG. 26

WARNING!

Always wear proper safety eyewear, hearing and respirator equipment when operating your grinder. Never turn on your grinder without first putting on this equipment.

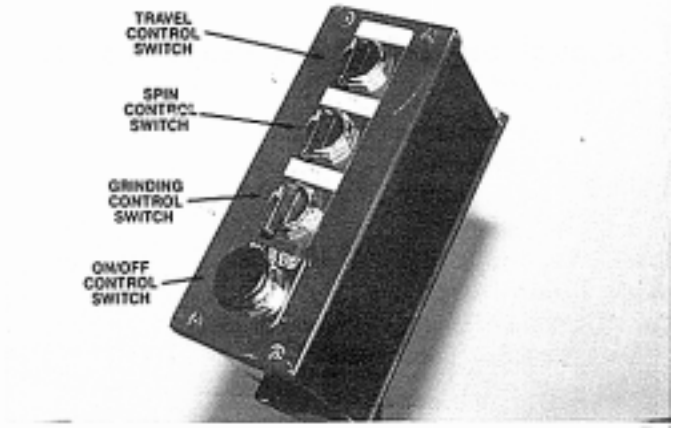


FIG. 27

TRAVEL CONTROL SWITCH — The Travel control switch turns the traversing motor on and off. This controls the side to side traversing movement of the carriage and grinding head.

SPIN CONTROL SWTICH — The spin control switch turns the spin grind motor on and off. By turning the control switch on, you will spin the reel in the reverse direction of its normal operation.

GRIND CONTROL SWITCH — The grind control switch turns the Grinding wheel on and off.

ON/OFF CONTROL SWITCH — This is the main power switch. Pulling out will turn the main power on and pushing in will turn power off — the large button type design allows a quick stop of all power in an emergency situation.

OPERATING INSTRUCTIONS

INTRODUCTION TO MOUNTING

The setups of over 30 different reels are explained in the detailed setup guide sheets located in the rear of the manual. Before proceeding with these instructions, determine the manufacturer and reel model number of the reel you are going to sharpen. Then locate its respective setup guide instructions in the back of the manual and proceed with the instructions below.

On page 61-64 are blank set-up guides for new reels that you come across that are not listed in the set-up guide section. If you find corrections to our suggested set-ups listed in the manual or come up with new ones, please fax a copy to us at 612-441-6016 and we will include it in the next printing of the operators manual.

In general, the 500 Series is designed to grind the reel while it is mounted in the mower frame. An optional accessory (No. 55508) is available to permit grinding of loose reels.

The sharpening of the reel while in the mower frame requires that: The bearings on which the reel rotates must be inspected and in satisfactory condition. Worn bearings will have an adverse effect on the grinding process.

The mower must be firmly held in position in the multi-position mounting brackets. Care should be exercised to ensure that the bottom of the bed bar and/or the rear roller are firmly held in place.

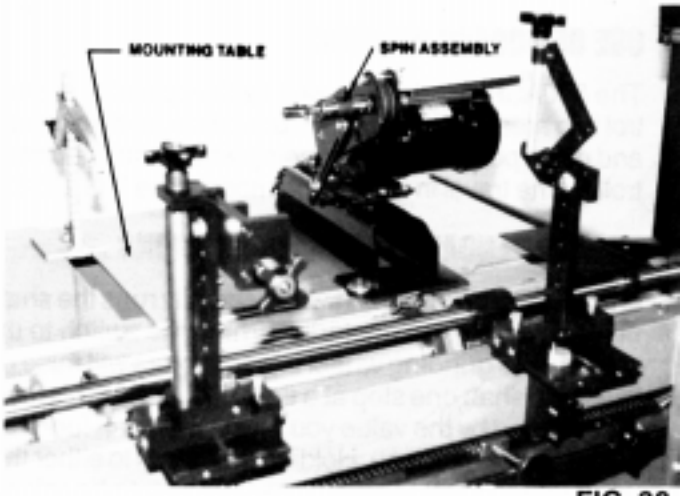


FIG. 38

REEL MOUNTING FOR THE 500 SERIES

When mounting a reel, there are several important steps to keep in mind to get it properly located.

FIRST—Determine which side to drive the reel and place the spin grinding assembly on the proper side and roughly position it in place. (See FIG. 38)

SECOND—Determine where the extension plates need to be secured to the front beam to allow the alignment gauge to locate as close as possible and yet have the measurement rod miss the spiders in the reel. Also, extension plates should be spaced as wide apart as possible to allow for measurement and yet give good mower support. (See FIG. 43)

THIRD—Determine where the support arms should be located. It is recommended to mount the support arm with as little extension from the all position bracket as possible leaving just enough clearance for mounting the reel in the "V" of the support arm. Your set up guide has some recommended horizontal and vertical pin positions.

When the reel is to be both spun and relief ground, the reel should be located in approximately the 1:00 o'clock position and 1½" to 2" above the table. If you are only spin grinding, then you can mount the unit lower at approximately 3/4" above the table. (See FIG. 39)

FOURTH—Make sure that the grinding wheel will not contact the mower frame during operation.

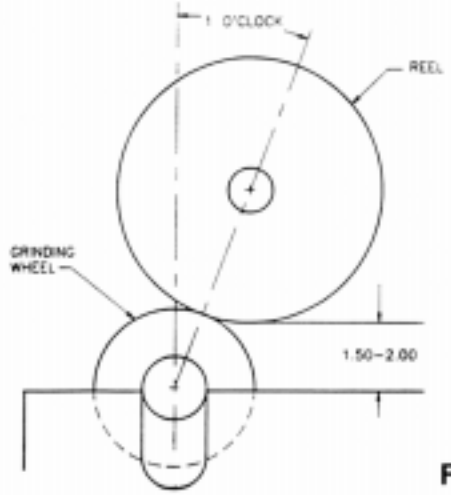


FIG. 39

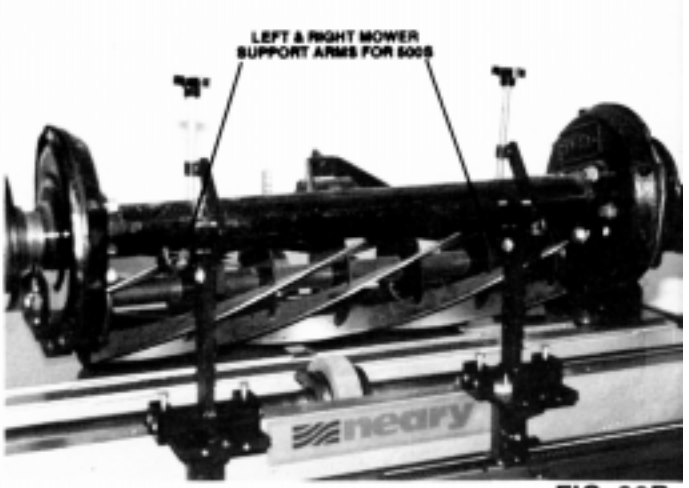


FIG. 39B

OPERATING INSTRUCTIONS

FIG. 40A

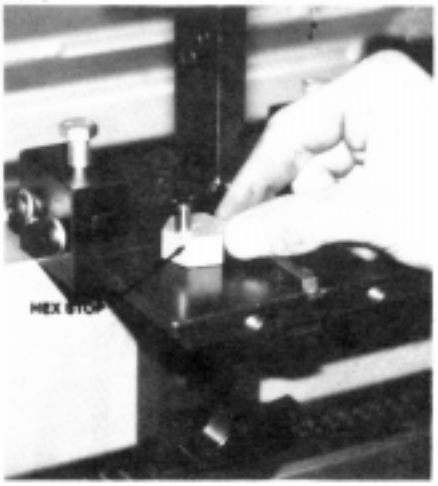


FIG. 40B

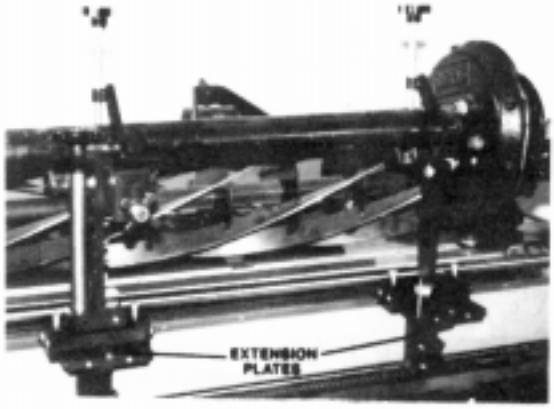


FIG. 40C

The 500 Series grinders have been equipped with a flexible mower support system. You locate the mower forward and back with the all-position brackets. The brackets can be loosened and relocated using the "hex-stop" in the locating holes on the extension plate. This insures that the all position brackets are an equal distance from the grinding wheel. (See FIGS. 40A, 40B, & 40C)

OPERATING INSTRUCTIONS

Position the reel unit to be sharpened onto the floor behind the grinder with the front of the reel facing towards the operator's position or front of the grinder. Hook up the support bar chains to the reel.

You are now ready to place the reel mower onto the table with either your own hoisting unit or the optional elevator. (Part **#50104**) (See FIG. 44)

Engage the winch safety latch. The latch is engaged if you hear clicks as you turn the latch handle clockwise.

WARNING!

The winch safety latch must be engaged before attempting to raise the reel into position. Do not allow the handle to free wheel when lowering the wheel.

Using the winch and the capability of swinging the upper elevator stand, position the reel, so the reel roller is resting on the mounting table.

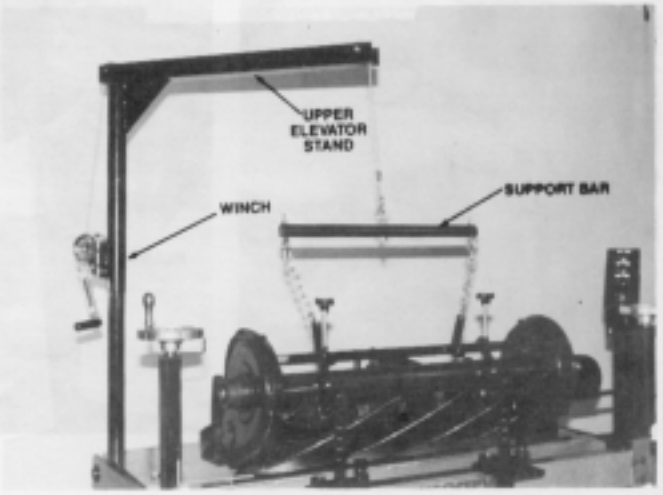
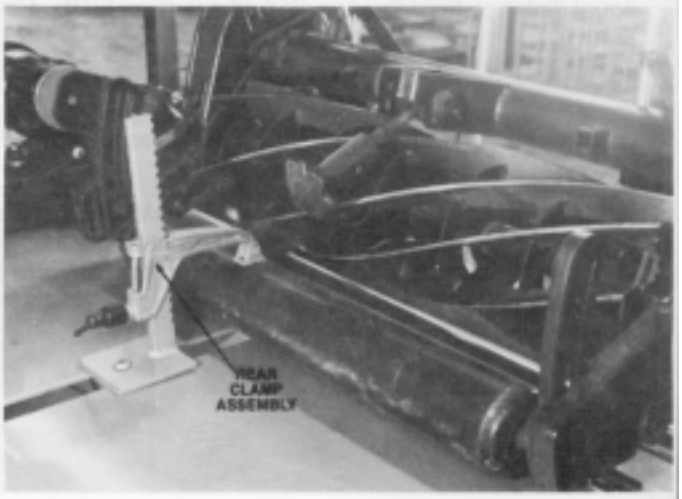


FIG. 44

REEL CLAMPING FOR ALL 500 SERIES GRINDERS

When the reel mower is satisfactorily positioned, the hanger clamps can be tightened and the rear clamp assembly can be positioned in the table slot to clamp the rear mower roller (or other clampable feature) to the table. See FIG. 45.



Old Style Clamp shown, for new style clamp, see parts lists

FIG. 45

SPIN GRINDING ON THE MODEL 500S & 500SR

NOTE: Make sure you have properly mounted and aligned your reel prior to grinding.

1. Turn the power switch on. (See FIG. 59)
2. Turn the spin drive motor on.
3. Turn the traverse drive on.
4. Turn on grinding wheel.
5. Slowly infeed grinding wheel equally from both ends to start grinding.

   NOTE: Vertical adjusting handwheels have calibrated markings at approximately .005". (See FIG. 60)
6. Continue grinding (making sure to infeed each end of grinding wheel shaft equally) until the reel is sharp.
7. On the 500SR when spin grinding is complete, park the spin grinding assembly under the wheel guard on the left end of the grinder. (See FIG. 63)

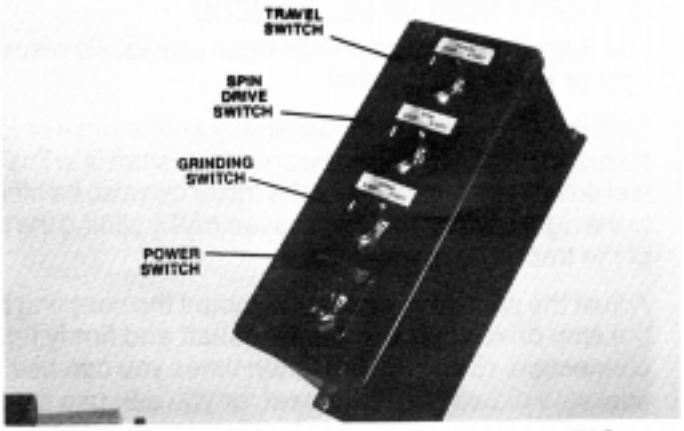


FIG. 59

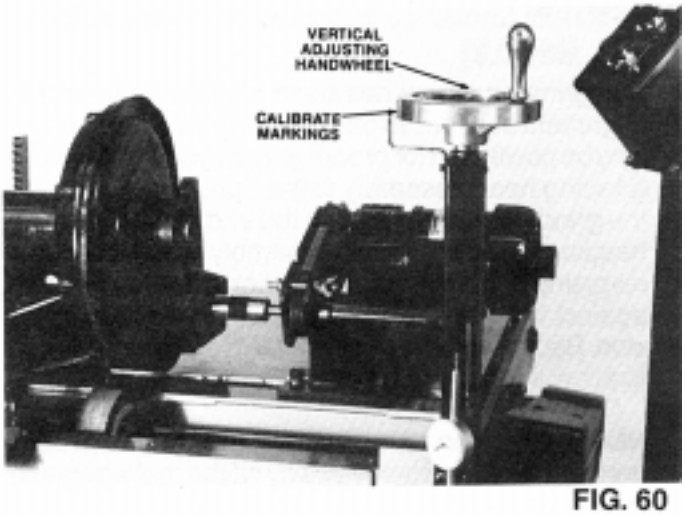


FIG. 60

OPERATING INSTRUCTIONS

GENERAL OPERATION

SPIN DRIVE HOOK UP (ALL MODELS)

The Spin Drive Assembly has been previously placed at the right or left end of the reel.

Shift the entire spin drive assembly and/or raise or lower the spin drive assembly until the spin drive shaft is in line with the reel drive shaft. If necessary, the motor can also be offset either to the right or left of the track assembly by sliding the plate out of the track and reversing it.

Adjust the spin drive motor and mount the coupling between the spin drive shaft and the reel shaft and firmly tighten the connection. (See FIG. 56) Often times you can use the 1/2" socket to directly drive the reel, or you can use the optional drive and mounting kit.

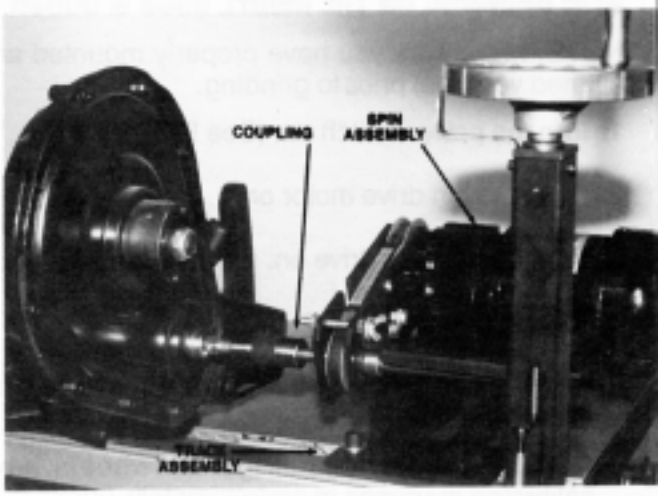


FIG.56

POSITION GRINDING WHEEL & TRAVERSE STOPS (ALL MODELS)

The grinding wheel has been aligned in the mounting and alignment section. To be ready to grind, the travel stops must now be positioned for proper grinding operation. Move the spin grinding head assembly to the right end of the reel blade so the grinding wheel is half off the end of the reel. (See FIG. 57) Keeping the spin grinding assembly in that location, move the reversing bar in the same direction and then position the stop against the spin grind assembly. (See FIG. 58) Tighten the stop. Repeat at the left end of reel. Now tighten the control knob to allow the drive to be ready to engage.

NOTE: On some mower units it may not be possible for the grinding wheel to come halfway off the reel without striking the mower frame. If there is ample room, split the difference or lower the reel to gain clearance, or grind off part of the mower frame.

Advance the grinding wheel shaft equally (so you do not alter your alignment) on both ends so the wheel is just below but not quite touching the reel at its largest end. You are now ready to grind.

For 500S and 500SR Spin Grinding Instructions turn to page 26.

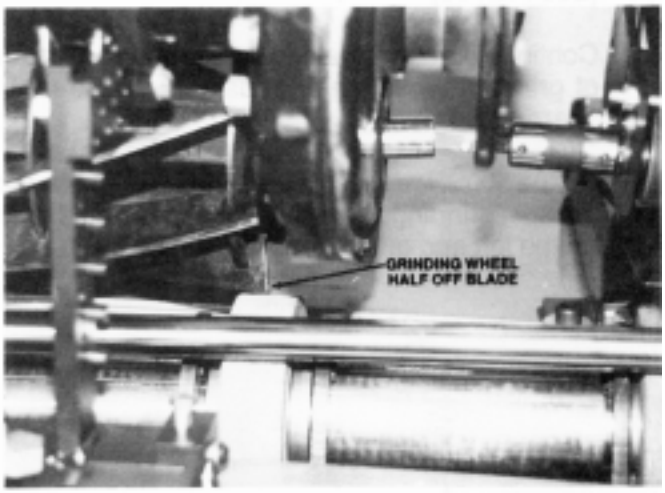


FIG. 57

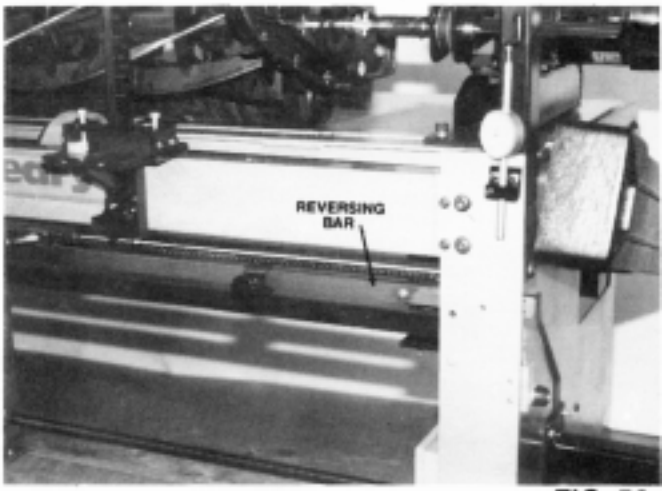


FIG. 58

OPERATING INSTRUCTIONS

GENERAL ALIGNMENT OPERATION FOR MODEL 500S

If your unit is a Model 500SR or 500ASR, ignore the following instructions and continue on to page 24.

MOUNTING & ALIGNMENT

1. Turn the ON/OFF switch to off.
2. Mount the reel as outlined in the general mounting instructions on the preceeding pages.
3. Using the handwheels, raise both ends of grinding wheel shaft equally using the handwheels on each end of the unit while moving the grinding head back and forth on shaft until wheel just contacts reel blades. (See FIG. 47)
4. Once positioned, manually spin the reel using the flexible coupling on the spin drive, while sliding the grinding wheel back and forth (left to right) to check for any excessively high blades. Make adjustments if necessary to maintain light contact.

   CAUTION: Do not rotate the blades directly by hand.
5. Now use the taper checker to determine if the reel is cone shaped per the instructions on the remainder of this page.

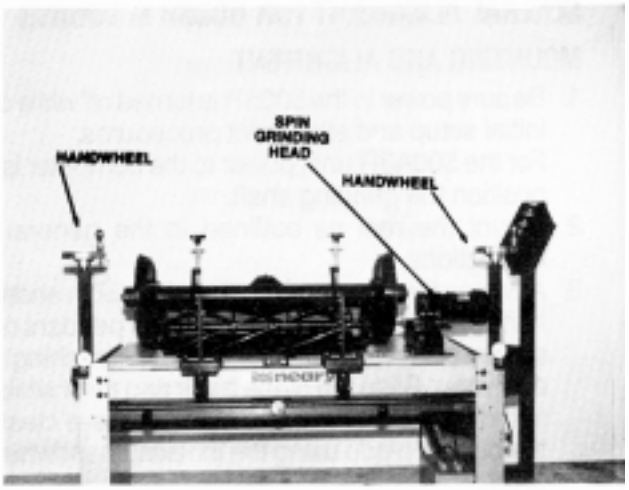


FIG. 47

TAPER CHECKER

Assembly: Install the foot to the end of the caliper. The bottom of the foot should be flush with the end of the caliper.

Operation:

1. Zero the indicator by closing the jaws and turning the dial to zero.
2. Locate the foot across two blades of the reel toward one end.
3. Extend the probe until it contacts the center of the shaft.
4. Note the measurement.
5. Take the same measurement at the other end of the reel.
6. The difference between the tow measurements is the amount of taper in the reel.


FIG. 48

Follow the manufacturer's specifications for allowable taper. Tor's maximum allowable reel diameter taper is .040 - .060". This gauge measures from one side. Therefore, the diffence between the two measuements taken by this gauge is the difference in the radius. Take this number times 2 to compare to a diameter specification.

Tip: There are many places to take the reading on a reel. You may wish to mark the places where measurements were taken so that later readings can be compared to them.

If tthe measurement you took with the taper checker indicates that you have a tapered or cone shaped reel. Lower the grinding shaft (with the handwheel) on the end of the mower that is smallest.

Once you have adjusted the grinding shaft for a tapered reel or if the reel has no taper. Set both indicators to zero. The grinding shaft can now be raised or lowered an equal amount within the indicators 2" operating range by having the same reading on both indicators or use the scribe lines on the handwheel. Each line represents approximately .005".

When this operation is complete the grinding wheel will be aligned parallel to the reel shaft making it a true cylinder. Now you are ready to spin grind.

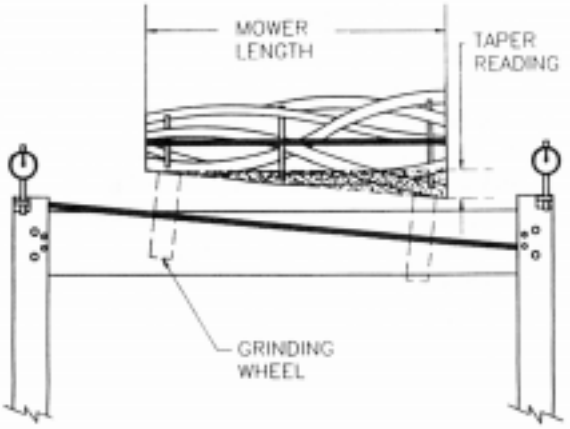


FIG. 49

RELIEF GRINDING—MODEL 500SR

1. Turn on the power switch on 500SR.
2. Turn the pendant selector switch to the **relief** setting. **NOTE:** The pendant switch must be in relief setting to allow one pass of the stone. (See FIG. 71)
3. Check to make sure the blade is located correctly for the first blade to be ground then turn on the grinder motor.
4. When ready, press the travel push button and the relief grinding assembly will start to the left, making a pass down and back.
5. Index to the next blade and press travel button.
6. Continue in this fashion until all blades are ground once.

   NOTE: When using the 500SR it is best to number the blades with a marker. We recommend that you do not always start the grinding sequence on the same blade. Move ahead to the next blade in rotation to start each subsequent grinding cycle until you are satisfied with your grinding result. This will ensure a more uniform back relief grind throughout all the reel blades.
7. In feed the grinding wheel evenly and make your way around the reel grinding each blade.
8. When each blade has adequate relief, turn off the grinding wheel and traverse motor.
9. When relief grinding is complete, park the relief grinding head under the guard at the right end of the machine. (See FIG. 71)

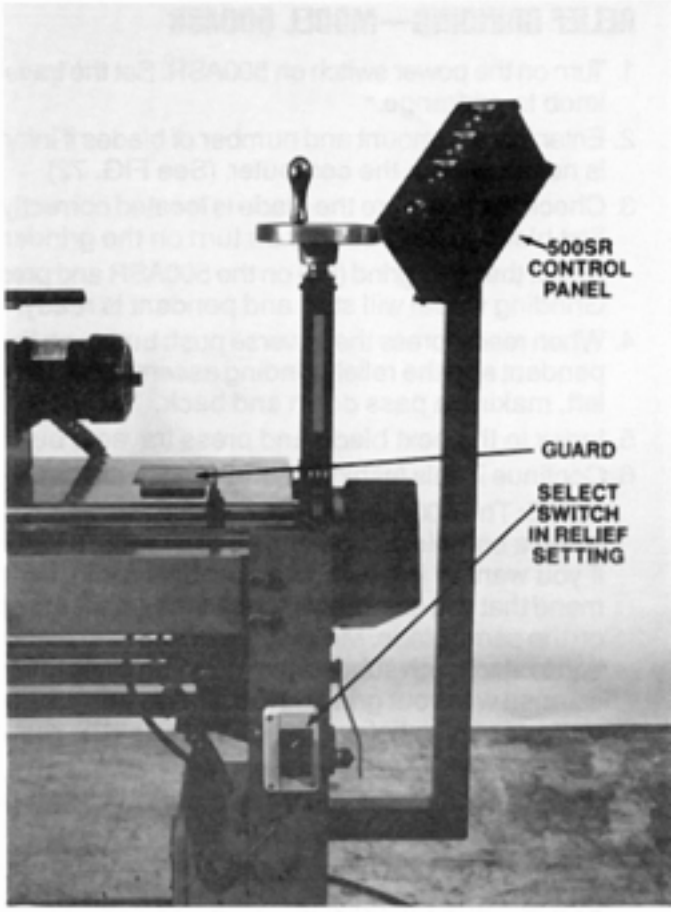


FIG. 71

WARNING! ***On a 500SR, if the pendant switch is in the "relief" position and the limit switch for the traverse motor is depressed (hub at left or traveling to the right), the hub will begin traveling upon power up.***

RELIEF GRINDING SET UP—500SR

1. **LOWER GRINDING SHAFT**
   Lower the grinding shaft equally from both ends and position the relief grinding assembly under the reel. (See FIG. 65)
2. **ADJUST REEL BLADE BACK STOP**
   The reel blade back stop should be maintained about 1/16 to 1/8" above the wheel (as illustrated) or as grinding conditions require. (See FIG. 68 Height Adjustment Bolt) The reel blade back stop is adjustable relative to the relief grinding wheel. Adjustment of the stop is accomplished by loosening the height adjustment bolt. (See FIG. 65) This is necessary to compensate for wheel wear and to give to proper distance for the individual blade of the reel to track the stop during grinding.
3. **ADJUST RELIEF GRIND GUIDE FINGER**
   The relief grind guide finger is a secondary stop finger which insures that the reel blades remain in the proper grinding orientation. Its height is automatically adjusted along with that of the reel stop finger. The position of the guide finger may also need to be adjusted so the space between the guide finger and the back stop can accommodate the thickness of the blades of a particular reel. The space between the stops should be enough to let the blades freely pass between them (i.e. not dragging on both stops at once) but still maintaining control of the blade. The adjustment screw is on the left side of the housing.

   NOTE: On smaller reels, you do not need the guide finger and you can remove it to gain clearance.
4. **ADJUST RELIEF ANGLE**
   The relief angle is adjusted by means of the screw located in the slot of the relief grind housing. To adjust the angle, the reel blade will make to the grinding wheel, loosen the screw enough to allow the back relief housing to rotate thus causing the position of the blade to be moved relative to the grinding wheel.

   Back relief angles can vary from as little as 10°-15° to as much as 45°. You should always maintain reel relief angles to original manufacturers specifications. When in doubt, copy manufacturers existing angles or this information can be obtained from the mower manufacturer.
5. **DOUBLE CHECK ADJUSTMENTS**
   Manually traverse the relief grind assembly left to right to insure that it will track the blade for the entire length and will not run into a spider.
6. **SET TRAVERSE STOPS**
   Set the stop to insure the relief grind assemble will:
   A. Allow the stop to clear the blades on the right end allowing the blades to be indexed.
   B. That the grinding wheel will come halfway off the reel on the left end yet clear the frame.

You should now be ready to grind.

7. **INDEX REEL HANDWHEEL**
   With the spin drive still connected to the mower. Double check that the drive rods are NOT connected to cylinder drive tube. You should be able to spin the drive rod by hand once you loosen the set screw. The indexing handwheel is fastened to the drive rod. This arrangement will safely allow you to index the reel from one blade to the next while keeping complete control of the index process. (See FIG. 70)

FIG. 64

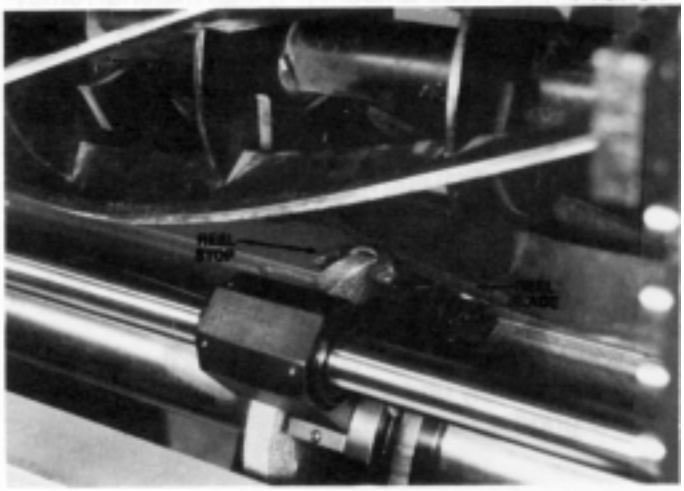


FIG. 65

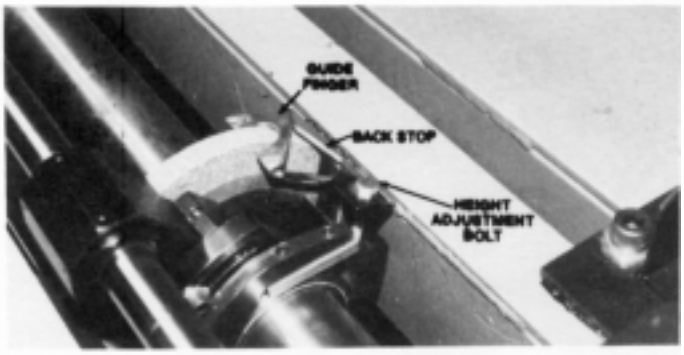


FIG. 68

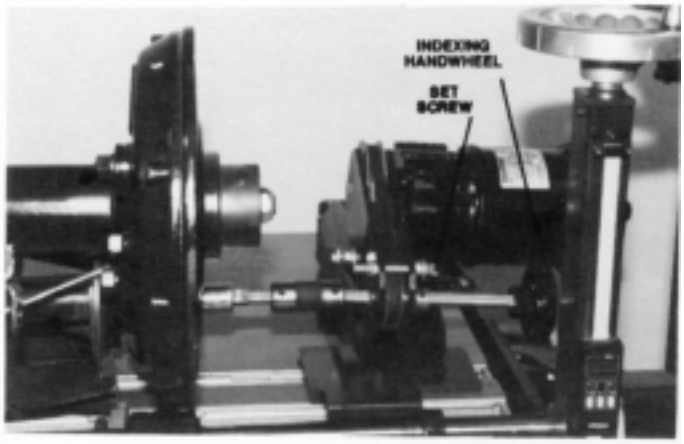


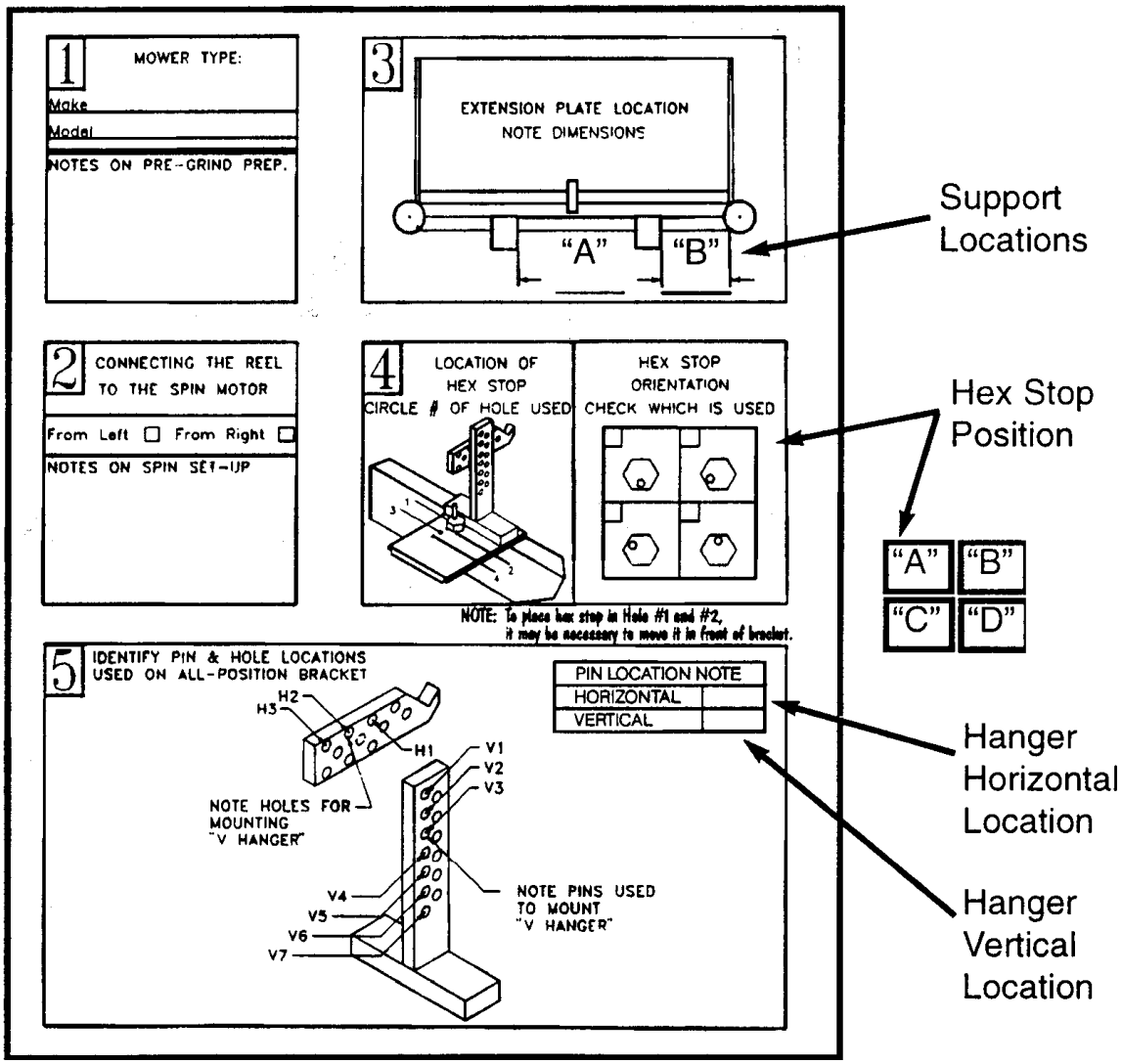
FIG. 70

This page left intentionally blank for note taking purposes.

Set Up Guide Instructions

For ease in set up, we have provided the following system for recording the set ups for specific mowers. The settings on the following page represent some of the more popular mowers. Mowers do change over time, and different operators have different preferences, these settings are given as a starting point and may require modification. If the operator records the initial set up of each cutting unit, the next time that mower needs maintenance, a completed set up sheet will greatly reduce set up time.

We have provided blank forms, so that they can be completed on site, and extra forms can be made on a copier. The key to reading the chart on the following page is shown below:



Manufacturer	Model	Preparation	Spin Location	Spin Set Up	Support Location A	Support Location B	Hex Stop Position	Hex Stop Position	Hanger Horizontal	Hanger Vertical
Bunton	Walker	Adjust roller up against spacer bar	Right	1-1/16" Socket with short drive bar	19"	20"	2	B	H2	V5,V6
Bunton	Walker with Brush	Remove wheels	Right	16" Drive Rod, 1-1/16" Socket	18"	22"	2	B	H1	V3,V4
Deere	305	Remove bedknife and front roller, insert 31" bar, Mount to bolts	Left/Right	#50171 Deere Adapter or 50081 Plate	20"	18"	2	B	H3	V2,V3
Deere	22 Greens Mower	Use front roller kit or use 9665 bar, Raise vertical cutter			15"	22"	2	B	H1	V4,V5
Deere	3325 MK1	Mount using front roller kit or remove roller and bolt to brackets	Left/Right	Use Deere Drive Coupler with Nut	23"	20"	2	D	H1	V6,V7
Ford	Gang				20"	20"	2	B	H1	V1,V2
Jacobsen	Blitzer		Right	Drain oil, 1-1/8" Socket	18-1/2"	19"	4	D	H1	V1,V2
Jacobsen	Fairway		Right	Drain oil, 1-1/8" Socket	18-1/2"	19"	4	D	H1	V1,V2
Jacobsen	Fairway HF15	Keep back roller on, slide mower to the far left when mounting	Left	1-1/8" Socket	16"	16"	2	B	H1	V1,V2
Jacobsen	Fairway/ BW Rollers	Adjust bed knife down	Right	Drain oil, 1-1/8" Socket	20"	20-1/2"	4	D	H1	V1,V2
Jacobsen	Greens King	Lock Height Adjustment, 2x4 under roller, Keep Brush off table.	Right	Use 9665 Rod, Use Spline Coupler	22-3/4"	15"	3	C	H3	V5,V6
Jacobsen	Greens Mower 22	Remove Bed Knife, Take off front roller, Use 9665 Rod	Left	15/16" Socket	17-1/2"	21"	2	D	H2	V4,V5
Jacobsen	Greens Mower 422	Remove Anti Scalp Roller & Bed Knife, Mount to Roller holes	Left	9/16" Socket	30-1/4"	9"	4	D	H2	V4,V5
Jacobsen	LF100	Lock Height Adjustment, 2x4 under roller, Keep Brush off table.	Right	Use 9665 Rod, Use Spline Coupler	22-3/4"	15"	3	C	H3	V5,V6
Jacobsen	LF3810	Lower Reel, Remove front roller	Left	3/8" Socket	18-1/2"	17-1/2"		C	H3	V1,V2
Jacobsen	LM430		Left/Right	15/16" on left, 9/16" on right	18"	22"	2	D	H2	V3,V4
Jacobsen	ST5111	Remove front roller and skids	Right		30"	12"		C	H3	V3,V4
Jacobsen	Tri King 1684	Lower Reel, push up skids, clamp on top frame bar	Left/Right	9/16" Socket, put bolt in axle shaft	34"	14"	2	C	H3	V2,V3
Jacobsen	Tri King/ Quick Coupler	Remove Skids, Lower Reel, 31" bar with 3/8" tapped holes	Left	Bolt to drive	20"	18"	2	B	H3	V2,V3
Jacobsen	Turf King	Lock Height Adjustment, 2x4 under roller, Keep Brush off table.	Right	Use 9665 Rod, Use Spline Coupler	22-3/4"	15"	3	C	H3	V5,V6
National	84"	Mount to top frame tube, remove bed knife to relief grind	Left/Right	Use 50041 and 50042 Couplers	23-1/8"	18-1/2"	2	D	H3	V4,V5
Ransomes	11 Blade		Right		20"	20"	2	B	H2	V1,V2
Ransomes	350D 7 Blade	Remove pump and lower reel, raise roller, mount on bolts or roller	Left	Use long drive rod/ Ransome Coupler	22"	20"	2	D	H1	V5,V6
Ransomes	Hydraulic 5		Left/Right	Use long drive rod/ Ransome Coupler	18"	20"	2	B	H2	V1,V2
Ransomes	Triplex 171	Remove right side plate, belt and pulley	Right		15"	20"	2	D	H1	V4,V5
Ransomes	Triplex 180		Right	Pulley Drive	15"	20"	2	C	H1	V4,V5
Sabo	Continent	Remove skids	Left	1/2" Socket, small drive rod	18"	25"	3	A	H1	V1,V2
Toro	223		Left		18"	20"	3	D	H1	V6,V7
Toro	105/Paddle Roller	Lower reel	Right		9"	28"	3	D	H3	V5,V6
Toro	105/Wilie Roller	Lower reel	Right	2" blocks under rear roller	9"	28"	2	A	H1	V6,V7
Toro	216D	Bolt directly to multi position arm	Right	Mount on outside ends of front roller	23"	25"	1	C	H1	V5,V6
Toro	350D	Lower reel, mount to front roller or top frame	Left		20"	20"	4	C	H2	V2,V3
Toro	450D	Lower reel, mount to front roller or top frame	Left		20"	20"	4	C	H2	V2,V3
Toro	GM 1000	Remove groomer	Left		18"	20"	3	C	H1	V5,V6
Toro	GM 300	Remove groomer	Left/Right	1/2" Socket	18"	20"	2	D	H1	V5,V6
Toro	GM 3000	Remove groomer	Left	1/2" Socket	20"	18"	4	C	H1	V5,V6
Toro	Greens Master	Remove front roller and insert mounting bolts	Left	1-1/4" socket	22"	17"	2	D	H2	V6,V7
Toro	HTW	Remove Wheels	Left		16"	20"	2	A	H1	V3,V4
Toro	Park Master		Left		18"	20"		B	H2	V1,V2
Toro	Reel Master	Remove wheels, drain oil from left case	Left	7/8" Socket	19-1/2"	18-3/4"	3	D	H3	V1,V2
Toro	Series 5	Turn up skids and move about 4" toward center	Left/Right	Use long drive rod	15"	18"	2	D	H1	V4,V5
Toro	Spartan	Remove wheels, Slide mower far left, rear roller up	Left	15/16" Socket	16"	16"	4	D	H2	V1,V2
Toro	Super Pro	Remove skids, 1" blocks under rear roller	Left		20"	20"	2	C	H3	V2,V3
Toro	Tee 70		Left		15"	20"	2	B	H2	V1,V2
Toro	Turf Pro 84"	Use Toro Adapter	Left		15"	20"	2	C	H1	V2,V3

Set Up Guide for Model 500

1 MOWER TYPE:

Make

Model

NOTES ON PRE-GRIND PREP.

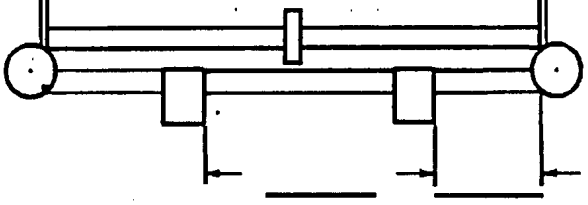
2 CONNECTING THE REEL TO THE SPIN MOTOR

From Left ☐ From Right ☐

NOTES ON SPIN SET-UP

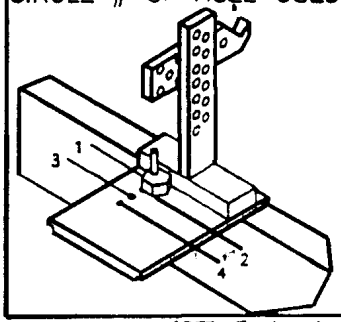
3

EXTENSION PLATE LOCATION
NOTE DIMENSIONS

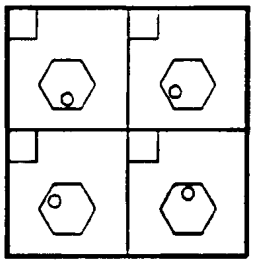


4

LOCATION OF HEX STOP
CIRCLE # OF HOLE USED



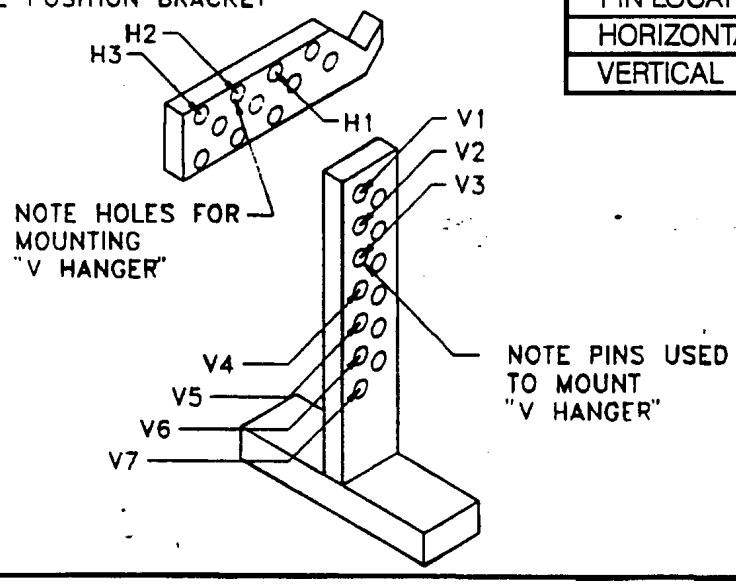
HEX STOP ORIENTATION
CHECK WHICH IS USED



NOTE: To place hex stop in Hole #1 and #2, it may be necessary to move it in front of bracket.

5 IDENTIFY PIN & HOLE LOCATIONS USED ON ALL-POSITION BRACKET

PIN LOCATION NOTE	
HORIZONTAL	
VERTICAL	



MAINTENANCE & LUBRICATION INSTRUCTIONS

MAINTENANCE & LUBRICATION

It is recommended that the machine be kept as clean as possible. Deposits of grinding material should be brushed off of the table and operating parts on a daily basis. The use of compressed air to clean the unit is ***not recommended*** as it may cause grinding material to enter working parts.

The main grinding wheel shaft should be periodically wiped with a dry cloth and keyways cleaned with a soft dry brush. At intervals of one to two weeks, the main grinding wheel shaft and the bars that carry the fork assembly should be wiped clean and sprayed with a dry lubricant (or WD40). Apply excess oil at one shaft location and manually move the grinding assembly back and forth several times over this location. This "flushing" procedure will help remove deposits from inside wheel flanges.

After the shafts have been thoroughly cleaned and oiled, dry them. If oil is left on the shafts, the deposits of grinding material may effect the proper performance of the grinder. So always dry your shaft before grinding.

NOTE: It is normal for some grease to heat up and leak out of the grinding wheel shaft bearings. When regreasing is necessary, only fill 3/4 full using a high temperature lithium synthetic grease.

On the 500S and 500SR units, it is advisable to clean and oil the handwheel shaft feed screws monthly.

Motors are pre-lubricated and, under normal operating conditions, will require no additional lubrication.

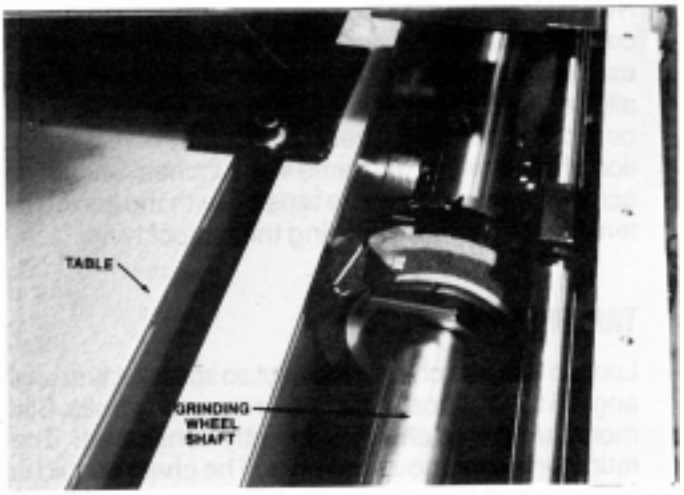


FIG. 86

500SR DIGITAL INDICATOR MAINTENANCE

ZEROING THE INDICATORS

This has been done at the factory but if the indicator gets inadvertently turned off then follow these instructions.

Level the grinding wheel shaft to the machine's front beam using either a straight edge or dial indicator to insure both ends are the same height from the front beam. Zero both digital indicators, then lower each end of the shaft an equal amount with the handwheels to a "Home" position. Make sure the number on the right and left scales match and then rezero the indicators. Leave the indicator on so the machine will remain in parallel and ready to operate.

REPLACING BATTERY

Leave the indicators on ***continuously*** as they will operate for about 1 year in this mode and will always be ready to give you a reading at any time. When the battery needs replacing, remove the battery access plate, and battery. Install a fresh battery and turn unit on. Rezero the machine per the instructions in the previous paragraph.

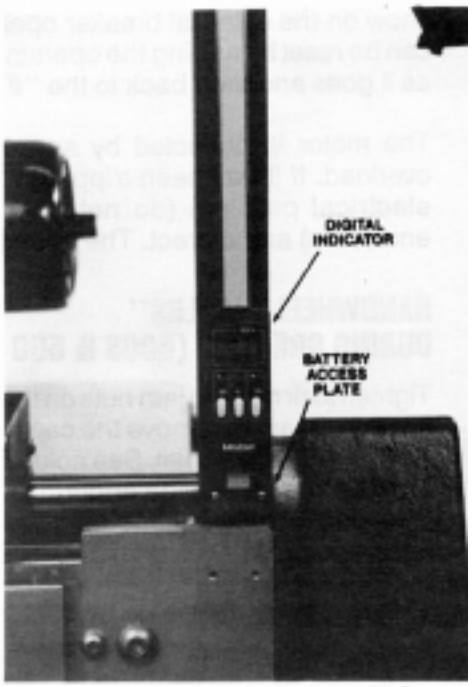


FIG. 87

REVERSING SWITCH ADJUSTMENT

NOTE: Vibrations occuring during the grinding process may cause the switch bar tensioners (FIG. 89) to exert less tension on the bar. If this occurs the bar is allowed to travel freely and premature reversing may occur. The grinding wheel may rapidly reverse direction of travel within the same 4 or 5 inches. Should this occur, merely apply more tension with the switch bar tensioners by slowly turning them clockwise.

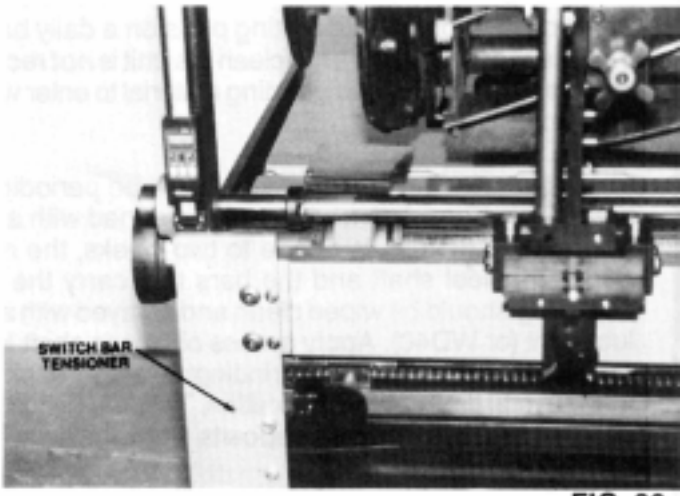


FIG. 89

TRAVERSE CHAIN LOOSE

Loosen traverse chain pulley nut so sprocket is at slight angle 5 to 10°. Loosen the motor mounting bolts. Slide motor until the chain is slightly tensioned. Then retighten motor mounting bolts. The chain should not be stretched taut. (See FIG. 90)

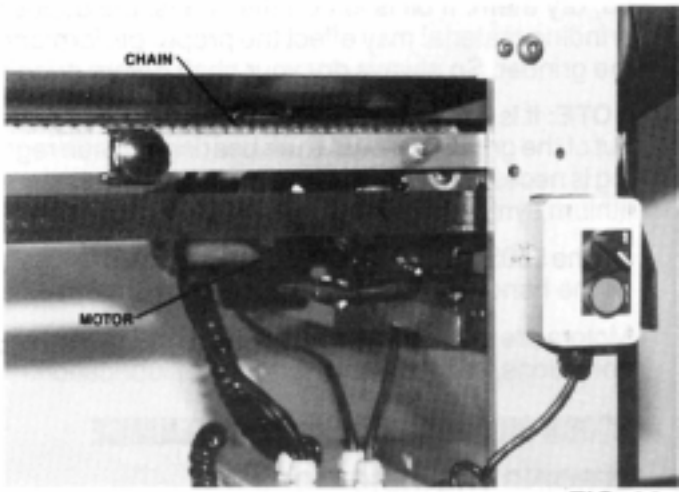


FIG. 90

CIRCUIT BREAKER TRIPS ON 500ASR

The ASR is equipped with a circuit breaker on the outside of the lower box as its main electrical protection. If the breaker is tripped, it will show on the external breaker operator. The breaker can be reset by turning the operator as far as it goes and them back to the "#1" or "ON".

The motor is protected by and automatic resetting overload. If it has been tripped, find the electrical or mechanical problem (do not open the main electrical enclosure) and correct. The relay will reset itself.

HANDWHEEL "WALKS" DURING GRINDING (500S & 500 SR)

Tighten lock nut and jam nuts on the handwheel shaft. It is necessary to remove the cap assembly (Part No. 50591) to tighten these. See column exploded views. Tighten nuts to provide enough tension to eliminate "walking" while maintaining smooth handwheel operation.

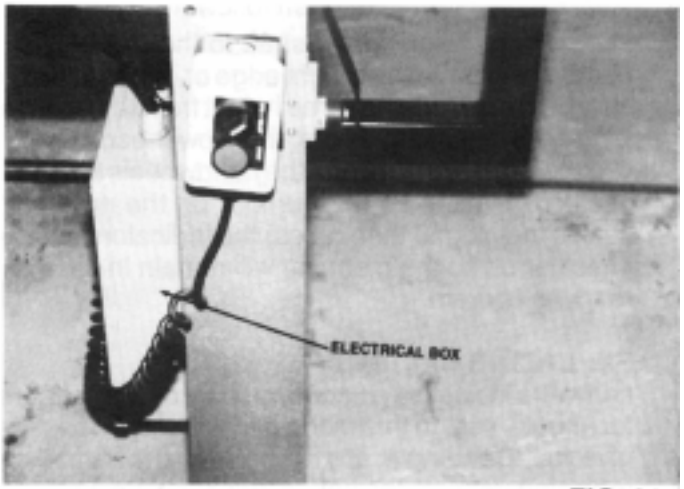


FIG. 91

WHEEL DRESSING

The 500S and 500SR are supplied with a dressing brick. Dressing can be accomplished from either the front or rear of the machine (which ever the operator finds convenient). However, be careful to note direction of wheel rotation and where it will throw dressing debris. Always protect your eyes.

An optional hand held diamond dresser is available. (Part No. 9702) Note when using a diamond dressser be careful not to plunge the dresser into the grinding wheel so agressively that you damage the diamond dressing tip. (See FIG. 94)

The 500ASR comes with a diamond dressing attachment (No. 55509). To dress, place the dresser in a convenient spot along the table slot. Raise the grinding wheel so it is nearly touching the dresser. Now slowly infeed the dresser until it just touches the wheel. Pass the wheel back and forth past the dresser infeeding just enough to dress the wheel.

NOTE: Be careful not to overfeed the diamond dresser into the grinding wheel and thereby damaging the diamond dresser.

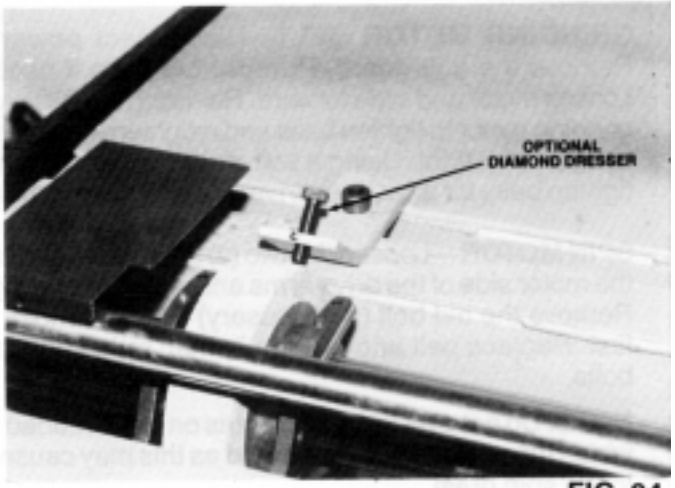


FIG. 94

RELIEF HEAD

The relief grinding head should be cleaned regularly. Remove all grinding grit from the head. Remove guide finger and clean the mounting holes into which it mounts to allow it to be easily adjusted when needed. Be sure the screw which secures the angle adjustment is tight when attempting to adjust the guide finger. (See FIG. 96)

IMPORTANT: When regreasing, use a high temperature lithium synthetic grease **ONLY. DO NOT** overgrease as this will cause too much pressure to build up inside the hub. This pressure will result in excessive friction on the grinding shaft.

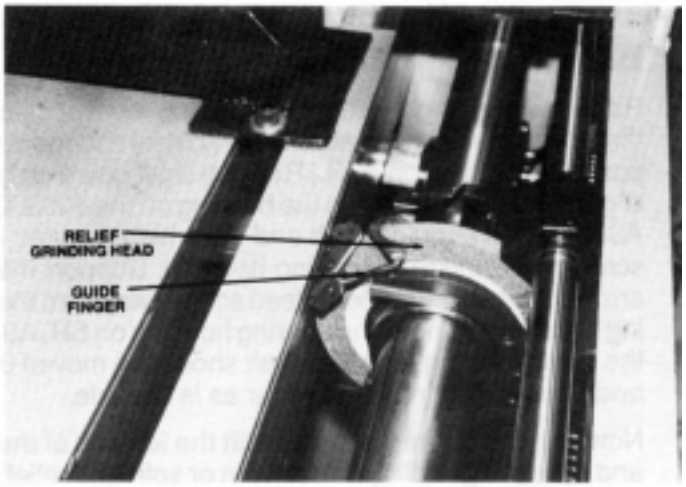


FIG. 95

BELT REPLACEMENTS

GRINDING MOTOR BELT—Disconnect power cord. Remove the belt guard. Remove old belts if necessary. Loosen motor and slide forward. Reinstall new belts and pull grinding motor to tighten belts and retighten motor fasteners snug but not tight. Using a soft mallet tap base of motor to tighten belts for adequate drive and secure fasteners fully.

SPIN MOTOR—Loosen the two (2) 5/16" hex head bolts on the motor side of the drive arms and slide the arm together. Remove the old belt (if necessary) from the motor pulley first. Replace belt and tension it, then retighten the 5/16" bolts.

NOTE: Do not over tighten the nuts on the threaded stud to which the shaft guard is attached as this may cause a bind in the spin drive.

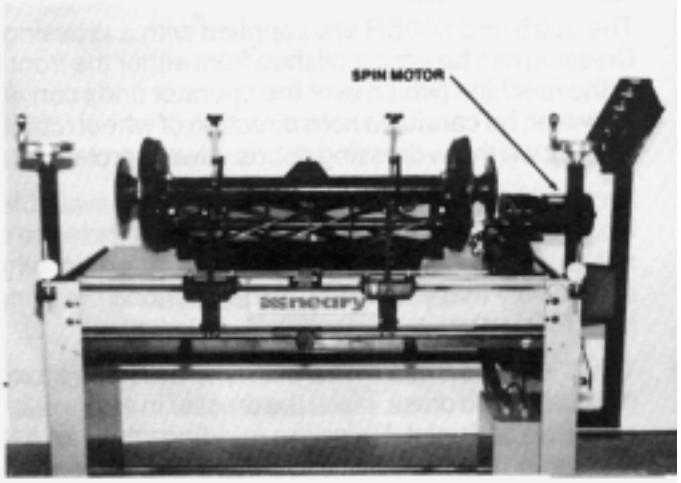


FIG. 92

WHEEL REPLACEMENT S, SR

Raise the grinding wheel shaft to its top most position and then lower the right end about 1/4". Remove shaft guard on the 500. Support the pivot arm and then back the left infeed screw away from the bearing housing. Remove the bearing housing on SR, and the relief grinding restraint shaft should be moved up and away from the grind shaft as far as is feasible.

Now with the bearing removed lift the left end of the shaft and slide the grinding wheel (spin or spin and relief) hubs off the shaft. Using the spanner wrench, remove and replace wheel. Place wheel hubs back on the grinding shaft and making sure to get them back between the drive yoke assembly.

IMPORTANT: Make sure the spin hub is placed on the shaft with the same orientation as shown on the frame assembly drawing. The relief hub should have the same orientation as shown on the relief grind hub assembly drawing.

Reinstall bearing (bearing housing SR, making sure to get the bearing housing located on the pins). Reinstall restraint shaft on SR, then replace shaft guard. Then home the grinding shaft.

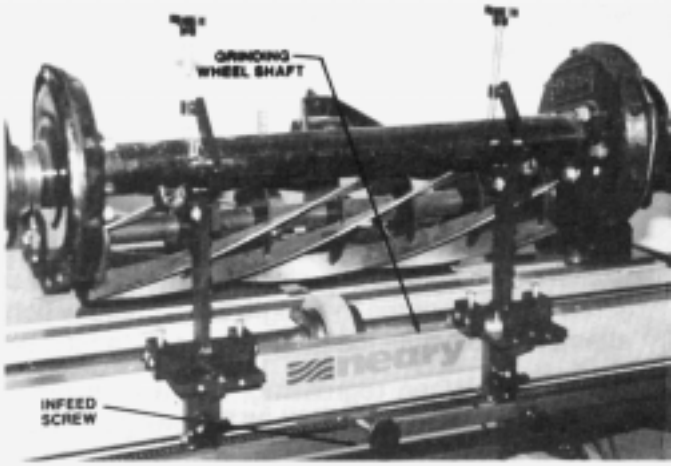


FIG. 93

Troubleshooting:

1. **Ask Questions???**
2. **Double check the easy things first.**
3. **Establish a sequence.**
4. **Use common sense.**
5. **Use the manual.**
6. **Safety First!!!**

Ask Questions???

What does it do right?
What does it do wrong?
What won't it do?
Did it fail gradually?
Did it fail suddenly?
Did it ever work right?
What does the failure look Like?
Did it smoke?
Was there a smell?
Were there any different Sounds?

Electrical Control Boxes: Double check the following to assure that something as simple as a loose connection is not the source of the problem. When a 1/2 HP motor starts, it draws up to 55 amps for a very brief period of time. A loose connection cannot carry enough current to start some of these motors.

1. Double check the easy things first!!!
2. Tighten all screws (wire connections).
3. Push all buttons (on contactors, motor starters and relays).
4. Push on all relays (to assure they are seated in their sockets).
5. Reset all circuit breakers.

Then try it again...

To make your job easier, and to get you running quickly, Neary will ship a rebuilt, tested electrical control box for a nominal fee. We invoice for the exchange box upon shipment, and issue credit for the box that needs repair upon return to the factory. At the time of this printing, your net cost is $200 plus freight.

Motors: To determine if an AC Motor is good, unplug the machine, sketch wiring diagram for motor. Disconnect wires from machine and hook up a cord with a plug. Then plug it directly into the outlet. If the motor runs directly from the wall and not while wired to the machine, the problem is in the machine. Beware that Neary does use some DC travel motors. Do not plug DC motors into an AC outlet. Check the label on the motor.

TROUBLESHOOTING ALL MODELS

SYMPTOMS	POSSIBLE CAUSES	REMEDY
Red ON/OFF switch does not light, but machine runs.	ON/OFF switch bulb burned out.	Replace bulb.
Grinding wheel reverses at other than limit switch.	A) Traverse control dragging on switch bar. B) Inadequate tension on switch bar.	A) Eliminate interference. B) Adjust switch bar tensioners. See Maintenance Section.
Grinding wheel does not reverse.	A) Knob on stop bracket (Part No. 55543) not tight. B) Limit switch malfunction.	A) Tighten stop bracket knob. B) Inspect limit switch and attempt to trigger by hand.
Grinder kicks out on overload.	A) Grinding wheel shaft is at a severe angle. B) Relief grinding hub bearing retaining ring Part No. 55324 is too tight. (SR & ASR ONLY) C) Part No. 50073 Oilite wear pads are pinching relief hub assembly. (SR & ASR ONLY)	A) Raise or lower one end of the shaft until approximately level. B) Loosen locking screw on No. 55324 and slightly loosen bearing retaining ring. (SR & ASR) C) Grind off excess material on both wear pads to gain clearance. (SR & ASR)
Grinder trips wall breaker.	A) Machine is plugged into an extension cord. B) Wrong size breaker. C) Plug or cord damaged.	A) Remove extension cord and plug machine directly into outlet. B) Wall breaker must be 20 amps or larger. C) Replace cord.
Machine circuit breaker trips.	Machine too hot due to overcurrent.	Shut machine down and let cool for 10 minutes.
Machine circuit breaker trips immediately upon start.	Short circuit in wiring.	Inspect for short circuit.
Excessive noise or vibration on one end of the machine.	A) Belts too loose (right end). B) Set screws on bearing housing (Part No. 9414 on S and 55555 on SR and ASR) not tight on grinding shaft.	A) Tighten belts. B) Tighten set screws on Part No. 9414 or 55555.
Digital scale is showing an error message. SR *A. B is shown on display.* *B. E – -o5 (Overspeed error) is shown on display.*	A) Battery needs replacement. B) 1) Excessive vibration on that side of the machine. 2) Scale slide is dirty.	A) Replace battery with correct replacement. B) 1) Find source of vibration and eliminate. Check set screws on bearing 55555. 2) Clean slide.

TROUBLESHOOTING ALL MODELS

SYMPTOMS	POSSIBLE CAUSES	REMEDY
Grind, spin or travel motor will not start.	A) Overload has tripped. B) Relay coil not energizing. C) Individual operator switch not functioning. D) Grinding belt broken or slipping. E) Loose motor wire. F) No power to motor. G) Motor not functioning.	A) Reset overload and find reason for motor overload. B) Coil has loose wires or burnt out. Fix and replace. C) Check wiring and/or replace switch. D) Replace or tighten belt. E) Reconnect wire. F) Disconnect motor leads and check for current. G) Take motor off machine and direct wire to the wall (S&SR ONLY).
Spin or traverse motors won't run.	A) Motor brushes need replacement. (500 ASR ONLY) B) On 500ASR motor speed pot set at zero. C) Loose motor wire. D) No power to motor. E) Motor not functioning.	A) Replace brushes. (500 ASR ONLY) B) Reset speed pot setting. (500 ASR ONLY) C) Reconnect wire. D) Disconnect motor leads and check for current. E) Take motor off machine and direct wire to the wall. (S&SR ONLY)
Grinding wheel assembly does not travel.	A) Traverse control knob not tight on chain. B) Sprocket slipping on traverse motor shaft. C) Traverse pendant selector switch is set on spin. (SR ONLY) D) Traverse motor has a loose wire.	A) Tighten traverse control knob. B) Secure sprocket to shaft. C) Turn relief grind selector switch on pendant to relief setting. (SR ONLY) D) Reconnect wire.
Spin drive does not rotate reel.	A) Drive belt loose or broken. B) Drive rod not secured to cyclinder drive tube. C) Drive coupling to mower not engaged properly or not proper coupling. D) Spin drive guard is too tight. It is pinching the pulley.	A) Adjust or replace belt. B) Lock set screw in cyclinder drive tube. C) Engage coupling or use proper coupling. D) Loosen guard mount.
Grinding wheel traverse binding.	A) Shafts are dirty. B) Grinding wheel shaft at a severe angle.	A) Clean and oil shafts. B) Raise or lower one end of the shaft until approximately level.
Grind shaft height adjusting problem. *A. Handwheels loose/or "walks" during grinding.* *B. Handwheels bind.*	A. Hand wheel jam nuts have become loose on shaft. B. Handwheel too tight or shaft dirty.	A. Adjust locking nut & jam nuts on the handwheel shaft & inside column. B. Adjust handwheel on shaft and clean shaft.
Red ON/OFF switch does not light, and nothing runs.	A) Machine not plugged in. B) Fuse/circuit breaker blown for circuit on which machine is plugged in. (Building elec. box) C) Machine fuse or circuit breaker open.	A) Plug machine in. B) Find and correct reason for blown fuse. Replace fuse or reset circuit breaker. C) Find and correct reason for blown fuse. On 500S and 500SR, replace fuse in electrical box. On 500ASR, reset circuit breaker on outside of electrical box.

neary TECHNOLOGIES

Troubleshooting the Model 500 Travel

Symptom	Cause	Correction
Traverses from left to right and stops	It thinks it is in relief mode	Is relief switch on? Check for loose pendant wire, Check for loose wires in pendant .
It reverses direction before it hits the stop, it stops before it hits the stop in relief mode	The set screws in the frame on each end that adjust the resistance on the traverse bar are loose so the bar actuates the switch before it hits the stop	Tighten the set screws slightly, in the manual they are page 40 item 43.
It goes to one end and wants to keep on going that direction	Faulty wiring, Limit Switch mechanism binding, Limit Switch failure, Loose set screws in sprockets on jackshaft, Contactor failure.	Check wires, Check limit switch mechanism, Check set screws in sprockets, Check limit switch, Check the small contactor in the middle in the lower box. If contactor, replace with Neary #9980*
Occasionally blows 10 amp breaker in lower box, lights may dim in room	One contactor welded shut, insufficient available voltage	Replace contactor, Use shorter extension cord with #12 wire minimum.
Erratic behavior	Voltage Spikes	Use Neary 50548 Power Conditioner to arrest voltage surges. (We are testing this theory).

* This is the one marked 3BMS. The oldest 500's were CA2EN122F, the middle aged were LC1EC08F (Blue) and the newest are LC1K09 (Tan). The newest one will fit all of the older ones.

To check the 9980 Contactor, operate the limit switch to left, for blue ones you should see the red dot move back and forth. For the tan ones you should see the slider move back and forth. If in relief mode, the bottom one should actuate as well.

neary TECHNOLOGIES

Trouble Shooting

Lower Control Box

Circuit Breaker, Travel, Thermal/Overload Protection

Circuit Breaker: If the 10 Amp circuit breaker is the contactor that is tripping at various intervals of time, there may be power supply problems, not enough voltage, too much voltage, or voltage surges.

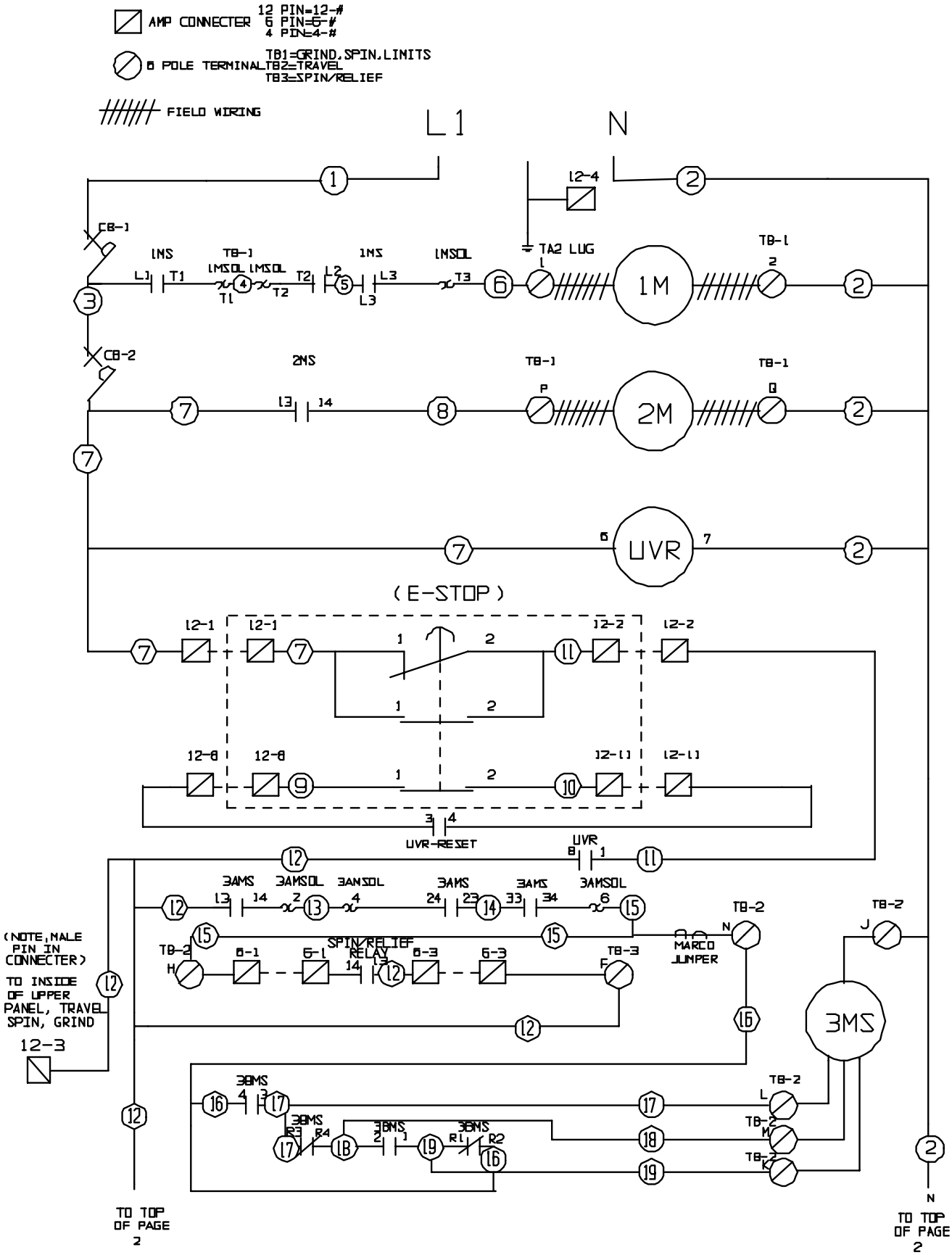
If this is the component in question, when you reset the circuit breaker, you should be able to start the motors immediately.

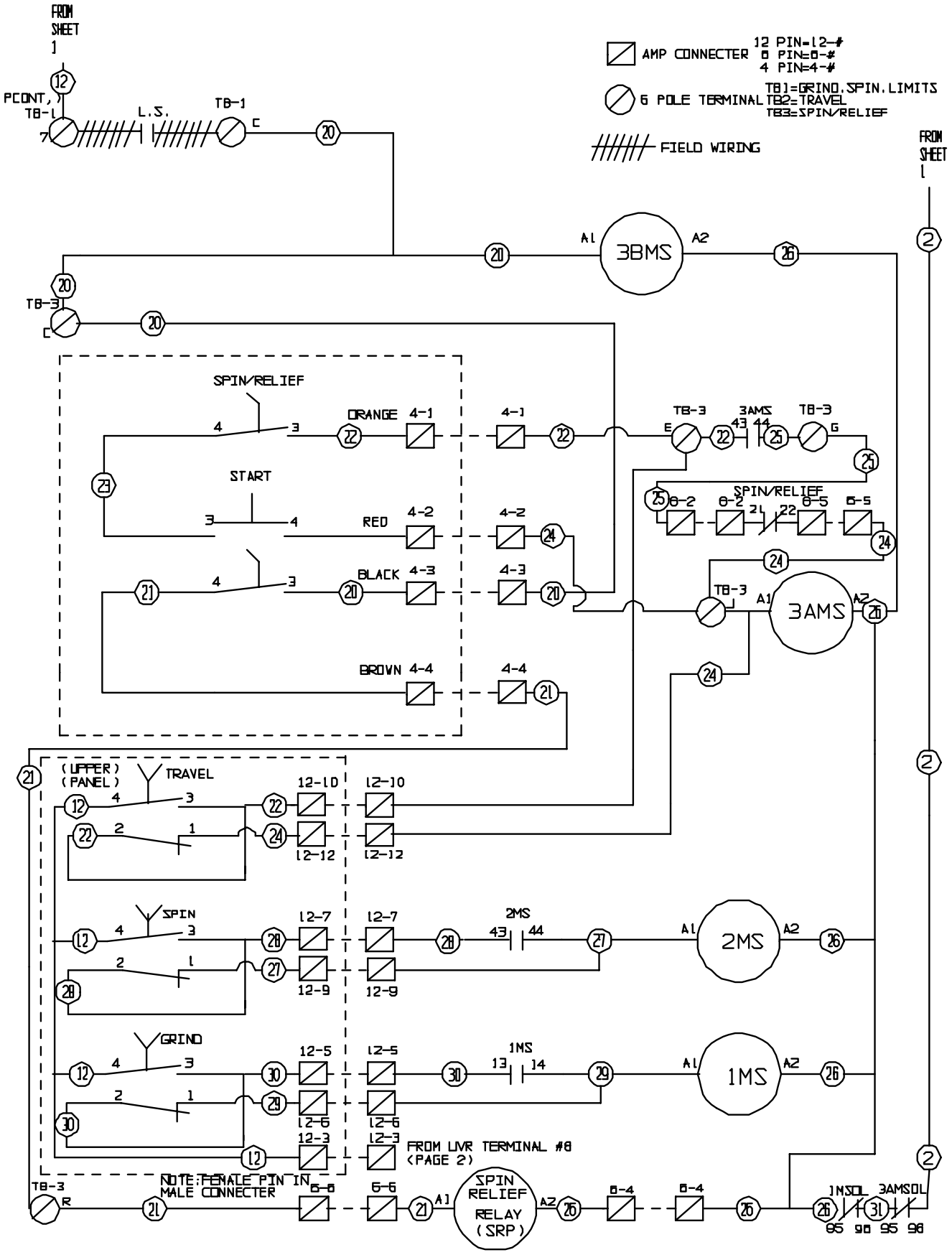
Make sure that the machine is plugged into the wall into a circuit with adequate power, and no light duty extension cords.

Another way to check and see if this is the problem, is to wire around the breaker and see if it works. The breaker is not in there to protect the components as much as it is there to limit the amount of power going through the switches. The amount going through the switches is under the 10 Amps, but when the motor reverses direction, it can send a momentary spike down the line which might trip the breaker.

The Contactor: What we call the contactor is a relay inside the box with 10 wires going to it. This should actuate every time the motor reverses.

Thermal/Overload Protection: If you have to wait for in excess of 10 seconds to start the motors after this event happens, it could be the thermal protector in one of the motors. This can be caused by a bad motor, too much power, or too little power. Again, a light duty extension cord can be the problem Also excess vibration due to loose or worn parts, or binding in the mechanism can cause the motors to trip the overload protection.


AMP CONNECTER 12 PIN=12-#
6 PIN=6-#
4 PIN=4-#
6 POLE TERMINAL TB1=GRIND.SPIN.LIMITS
TB2=TRAVEL
TB3=SPIN/RELIEF
FIELD WIRING
L1
N
CB-1
CB-2
1MS
1MSOL
TB-1
TA2 LUG
1M
2MS
2M
UVR
(E-STOP)
12-1
12-2
12-8
12-4
UVR-RESET
3AMS
3AMSOL
SPIN/RELIEF RELAY
MARCO JUMPER
TB-2
TB-3
3MS
3BMS
(NOTE, MALE PIN IN CONNECTER)
TO INSIDE OF UPPER PANEL, TRAVEL SPIN, GRIND
12-3
TO TOP OF PAGE 2


FROM SHEET 1
AMP CONNECTER 12 PIN=12-#
8 PIN=8-#
4 PIN=4-#
6 POLE TERMINAL TB1=GRIND.SPIN.LIMITS
TB2=TRAVEL
TB3=SPIN/RELIEF
FIELD WIRING
FROM SHEET 1
PCONT.) TB-1
L.S.
TB-1
TB-3
3BMS
SPIN/RELIEF
ORANGE 4-1
START
RED 4-2
BLACK 4-3
BROWN 4-4
TB-3
3AMS
43 44
SPIN/RELIEF
6-2
6-5
TB-3
3AMS
(UPPER) (PANEL)
TRAVEL
12-10
12-12
SPIN
12-7
12-9
2MS
GRIND
12-5
12-6
12-3
1MS
FROM LWR TERMINAL #8 (PAGE 2)
NOTE: FEMALE PIN IN MALE CONNECTER
TB-3
6-6
SPIN RELIEF RELAY (SRP)
6-4
1MSOL
3AMSOL
95 96 95 96

neary TECHNOLOGIES

Service Parts

As with most products, they evolve over time. The Model 500 has changed to meet the needs and suggestions of the people that use them. This manual therefore addresses not only six different models, but also several different versions of some portions of the design. We have added notes, where appropriate, to help guide you through these drawings so that you can order parts by the numbers, quickly and accurately. If you have questions about the parts you need, please have the model and serial number of the unit ready for reference.

Our most common service parts for the Model 500 are listed below

5710 Grinding Wheel for the Spin feature
5711 Grinding Wheel for the Relief feature
50014 Wrench for the Grinding Wheel Hubs
50523 Taper Checker
50073 Wear Pads for the Hub Drive Yokes
1740 Dressing Brick
9702 Hand Held Diamond Dresser
55509 Table Mount Diamond Dresser
10504 Optional Elevator Kit
50903 Hydraulic Lift Table and Ramp
55528 Grinding Enclosure
55577 Dust Collection System with Vacuum
55588 Front Roller Clamps
55508 Reel Mount Kit
50900 Equipment Cover
50514 Alignment Gauge
55000 Training Video

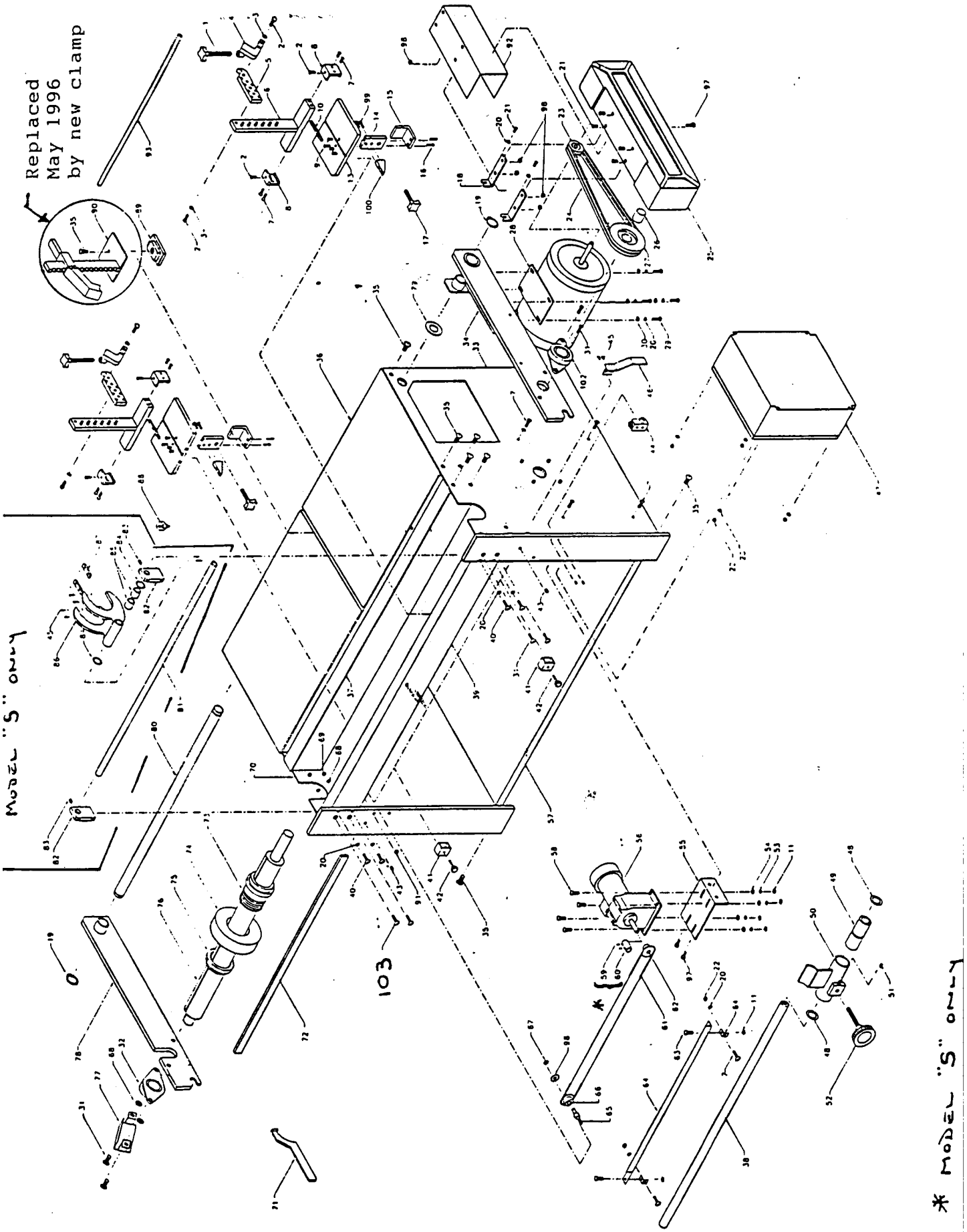
We also offer the following upgrade kits

50552 Model 500S to Model 500SR
50555 Model 500SR Old Style Relief Hub to 500SR New Style

50523 TAPER CHECKER

Parts List: 50523 Taper includes 50524 Caliper and 50525 Foot.

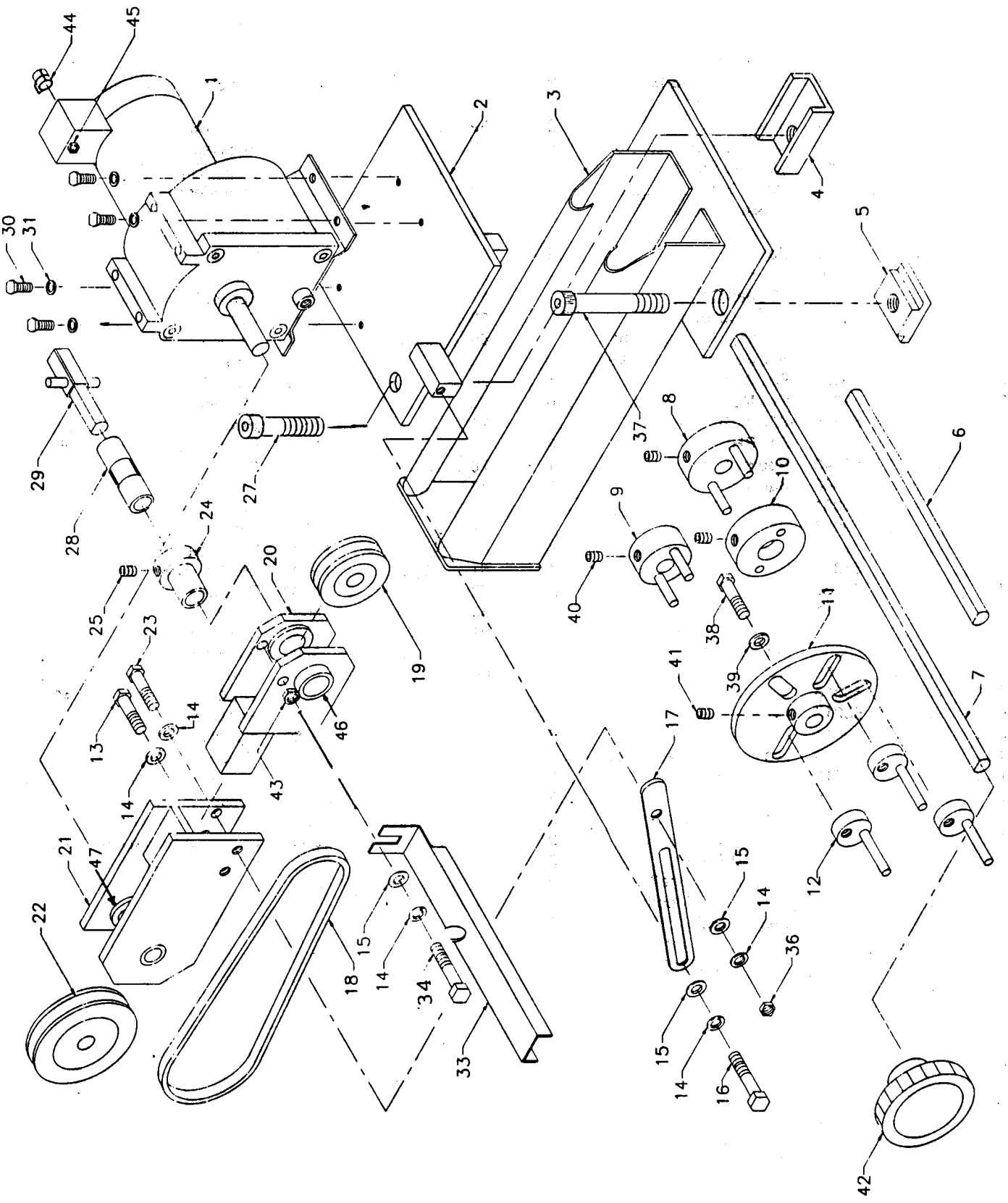
EXPLODED VIEW—500S & 500SR FRAME ASSEMBLY



Frame Components, Model 500S and 500SR

Item #	Part #	Description	Qty
1	17519	Knob, includes 17119, 9340, 9001	2
2	9104	Screw, Hex 3/8-16x1	8
3	9050	Washer, Flat 3/8	4
4	55343	Clamp, Large V Hanger	2
5	55282	V Hanger, Large	2
6	55230	Bracket, All Position	2
7	9109	Screw, Hex 5/16-18x3/4	14
8	55225	Plate, Clamp	4
9	9248	Screw, Flat Head Socket 1/4-20x1	8
10	55274	Key, Square 1/4 x 6	2
11	9014	Nut, Hex 1/4-20	6
12	9207	Screw, Socket Set 1/4-20x3/4	2
13	55220	Plate, Mount for All Position Bracket	2
14	55265	Block, Pressure	2
15	55222	Bar, Lock	2
16	9285	Screw, Socket Head 1/4-20x1/2	4
17	9314	Knob	2
18	55238	Bracket, Belt Guard	2
19	9275	Ring, Retaining, External 1-1/4	2
20	9053	Washer, Lock 5/16	16
21	9500	Screw, Button Head 5/16-18x5/8	6
22	9003	Nut, Hex 5/16-18	6
23	9409	Pulley	1
24	9389	V-Belt, AP51, Current Version	2
24	80050	V-Belt, AP52, Second Version	2
24	9835	V-Belt, BX51, First Version	2
25	55237	Guard, Belt	1
26	9411	Bushing, Tapered	1
27	9410	Pulley	1
28	9356	Motor, 110V 60Hz, 3450RPM, 500	1
28	9393	Motor, 220V 50Hz, 2850RPM, 501	1
29	9109	Screw, Hex 5/16-18x3/4	4
30	9052	Washer, Flat 5/16	4
31	9549	Screw, Button Head 1/2-13x1-3/4	8
32	9414	Bearing, Flange	2
33	50564	Side, Frame, RH	1
34	50530	Arm, Support, RH	1
35	9501	Screw, Button Head 1/2-13x1	15
36	55570	Top, Frame	1
37	50067	Beam, Second	1
38	50141	Shaft, Travel Control	1
39	55266	Beam, Front	1
40	9507	Screw, Button Head 5/16-18x1-1/4	4
41	55243	Stop, Travel	2
42	9767	Knob	2
43	9212,	Screw, Set 3/8-16x5/16	2
44	9415	Switch, Travel	1
45	9261	Screw, Socket Head 10-24x3/8	6
46	50011	Actuator, for Travel Switch	1
47		Box, Lower Electrical, see Section 6 Page 23	1
48	9276	Ring, Retaining Internal TruArc 5005-150	2
49	9404	Bearing, Linear	2
50	55577	Control, Travel, Model "S" only	2
50	50215	Control, Travel, Model "SR" & "ASR"	2
51	9204	Screw, Set 3/8-16x1/2	1
52	9408	Knob	2
53	9061	Washer, Lock 1/4	4
54	9057	Washer, Flat 1/4	4
55	55544	Mount, Travel Motor	1
56	9457	Motor, Travel, 110/220V, 60/50Hz, S&SR	1
56	9615	Motor, Travel, 90VDC, ASR only	1
57	50023	Shaft, Frame, Lower	2
58	9108	Screw, Hex 1/4-20x1	4
59	9216	Screw, Set 10-32x1/4	2
60	50181	Extension, Tavel Motor Shaft, "S" only	1
61	9406	Chain, RC35x299 Pitches including master & offset link	1
62	50180	Sprocket, Travel 35B21, 1" Bore, .812 Thick, 2.12 Hub	1
63	9139	Screw, Hex 1/4-20x5/8	2
64	50006	Guard, Chain	1
65	50036	Shaft, Travel Sprocket	1
66	50102	Sprocket, Travel 35B21, 5/8 Bore, .812 Thick, 2.12 Hub	1
67	9274	Ring, Retaining External 1/2	1
68	9064	Washer, Lock 1/2	6
69	9013	Nut, Hex 1/2-13	4
70	50565	Side, Frame LH	1
71	50014	Wrench, Grinding Wheel Hub	1
72	50010	Bar, Travel Switch Actuator	1
73	50039	Hub, Spin Grinding Wheel	1
74	5710	Wheel, Grinding	1
75	50037	Nut, for Spin Grinding Wheel Hub	1
76	50038	Shaft, Grinding Wheel Drive	1
77	50157	Guard, Flange Bearing	1
78	50531	Arm, Support LH	1
79	9402	Bearing, Thrust	1
80	50035	Shaft, Support Arm	1
81	50024	Shaft, Fork, "S" only	1
82	50025	Support, Fork Shaft, "S" only	2
83	9206	Screw, Set 5/16-18x1/2	2
84	9277	Ring, Retaining Internal TruArc 5005-125	2
85	9403	Bearing, Linear	2
86	50572	Fork	1
87	50073	Pad, Wear	2
88	55534	Stop, Hex	1
89	17069	Nut, Centering, for the old style clamp	1
90	55505	Clamp, Old Style, see section 6 page 10 for new style	1
91	9002	Nut, Hex 3/8-16	1
92	55228	Support, Belt Guard	1
93	9665	Rod, Mount	1
95	9119	Screw, Hex 5/16-18x5/8	2
96	9055	Washer, Flat 1/2	1
97	9114	Screw, Hex 5/16-18x1	1
98	9004	Nut, Flange 5/16	5
99	9536	Screw, Socket Head 1/4-20x1	5
100	55381	Gusset	2
102	55503	Bearing with 90 degree zerk, includes 9414, 9787	1
103	80048	Screw, Button Head 1/2-13x1-1/2	4

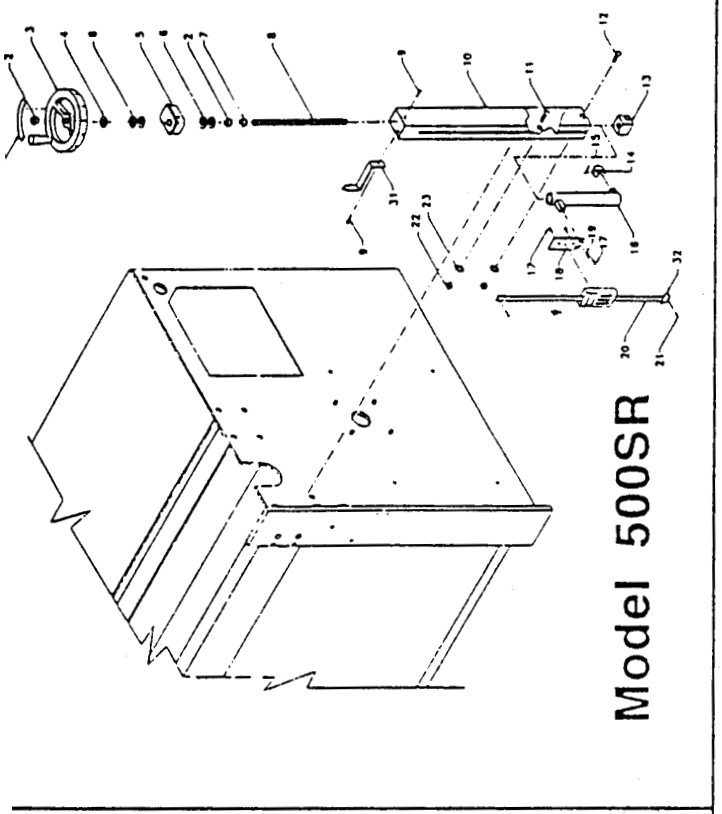
EXPLODED VIEW—SPIN DRIVE ASSEMBLY

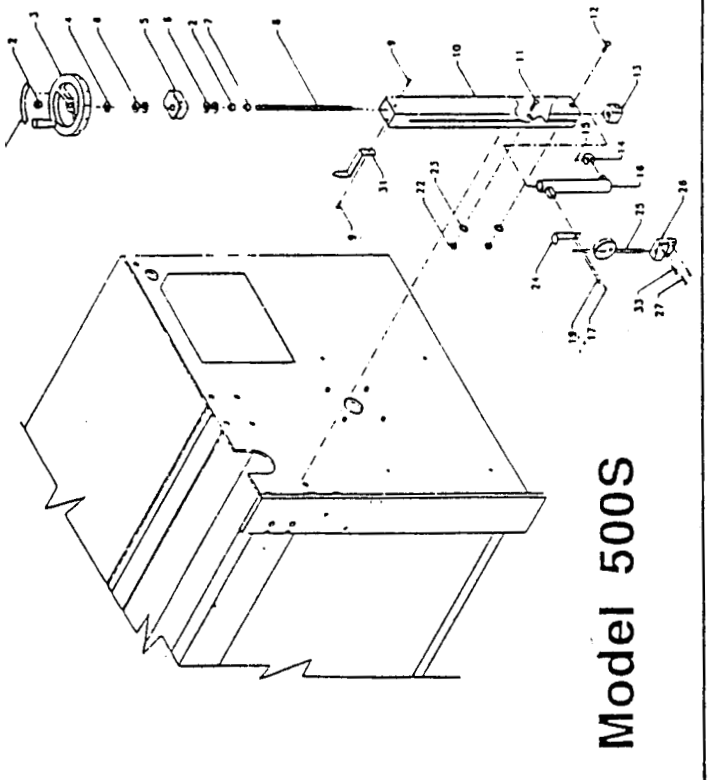


PARTS LIST—SPIN DRIVE ASSEMBLY

ITEM NO.	PART NO.	PART NAME	QTY.
1	9722	Gear Motor 1/8 HP 90VDC (ASR)	1
	9652	Gear Motor 1/6 HP (S & SR)	1
2	50022	Motor Mount	1
3	50590	Track Assembly	1
4	50088	Track Lock	1
5	17069	T Nut	1
6	50082	Drive Rod 8″ . . Optional	1
7	50182	Drive Rod 16″	1
8	50041	Shaft Driver (Male)	1
9	50040	Sprocket Driver . . Optional	1
10	50042	Shaft Driver (Female)	1
11	50117	Drive Plate	1
12	50081	Eccentric Pin	3
13	9120	Hex Cap Screw 5/16″-18 x 1.5″	1
14	9053	Locking Washer 5/16″	4
15	9056	Flat Washer 5/16″	3
16	9109	Hex Cap Screw 5/16″ - 18 x 3/4″	1
17	50004	Drive Adjuster Slide	1
18	9388	V Belt	1
19	9412	Sheave	1
20	55248	Drive Yoke	1
21	55247	Drive Yoke Support	1
22	9413	Sheave	1
23	9143	Hex Cap Screw 5/16-18 x 2″	1
24	50144	Cylinder Drive Tube	1
25	9209	Socket Set Screw 1/4-20 x 3/8″	1
26	9070	Flat Washer 1/2″	1
27	9505	Socket Cap Screw 1/2-13 x 2″	1
28	9434	Flexible Coupling	1
29	50583	Drive Shaft Pin Assembly	1
30	9113	Hex Cap Screw 1/4-20 x 3/8″	4
31	9061	Locking Washer 1/4″	5
32	9060	Flat Washer 1/4″	6
33	55359	Shaft Guard	1
34	9112	Screw, Hex 5/16-18x1/2	1
35	55602	Stud Shaft Guard	1
36	9003	Hex Nut 5/16″-18	3
37	9504	Socket Cap 1/2-13 x 5-1/2″	1
38	9101	Hex Cap Screw 3/8-16 x 3/4″	3
39	9058	Flat Washer 3/8″	3
40	9204	Socket Set Screw 3/8-16 x 1/2″	5
41	9208	Socket Set Screw 5/16″-18 x 5/16″	1
42	9735	Handwheel	1
43	9004	Flange Nut 5/16″	2
44	9612	Starin Relief	1
45	9012	Hex Nut 8/32″	1
46	9601	Outer Flange Bearing	2
47	9600	Flange Bearing	2

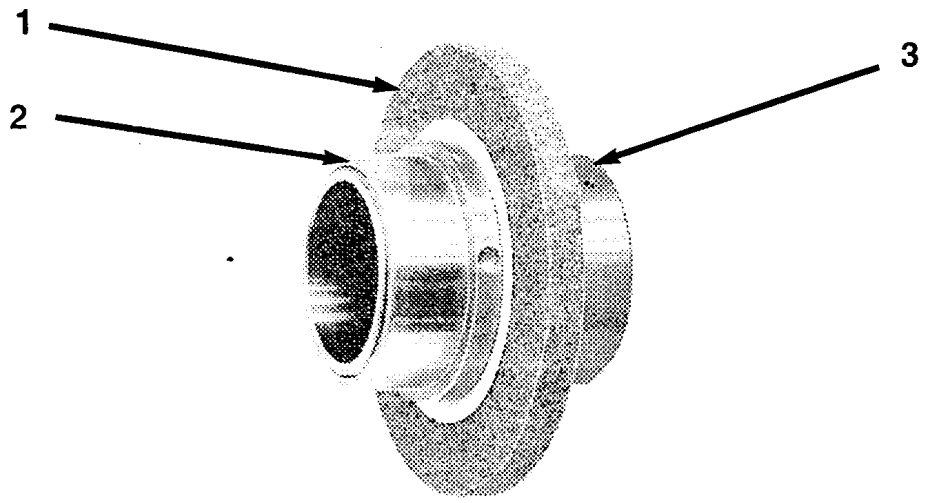
EXPLODED VIEW—COLUMN & DIGITAL SCALE ASSEMBLY





Item No.	Part No.	Part Name	Qty
1	09441	Up - Down Decal	2
2	09001	Hex Jam Nut 1/2 - 13”	4
3	50116	Handwheel	2
4	09492	Thrust Bearing	2
5	50591	Cap Assembly	2
6	09068	Spring Washer	6
7	09023	Hex Nut Nylok 1/2 - 13”	2
8	50092	Vertical Adjustment Screw	2
9	09261	Socket Cap Screw 10 - 24 x 3/8”	4
10	55294	Vertical Column	2
11	09501	Socket BHCS 1/2 - 13 x 1”	2
12	09299	Socket BHCS 1/2 - 13 x 2-1/2	2
13	50095	Mount Block	2
14	55336	Finger Pivot	2
15	09221	Socket Set Screw 6- 32 x 1/8”	2
16	55532	Tube, Scale Actuator RH, Threaded, for “S & “SR	1
	55533	Tube, Scale Actuator LH, Threaded, for “S” & “SR”	1
17	09526	Socket FHCS 3 x 0.5 x 6.0 mm	6
18	55337	Gage Mount Plate	2
19	09294	Rollpin 1/8 x 1/2”	2
20	09707	Digital Scale	2
21	09258	Scoket Cap Screw 8-32 x 3/8”	4
22	09013	Hex Nut 1/2 - 13	4
23	09064	Locking Washer 1/2”	4
24	55231	Dial Indicator Drive	2
25	09488	Dial Indicator 2” Drive	2
26	50155	Mounting Block	2
27	09261	Socket Cap Screw 10 -24 x 3/8”	4
28	09064	Locking Washer 1/2”	2
29	55295	Vertical Adjustment Shaft	2
31	50114	Pointer	2
32	55226	Bracket Modified	2
33	09533	10 -32 x 3/4” Socket HCS	2

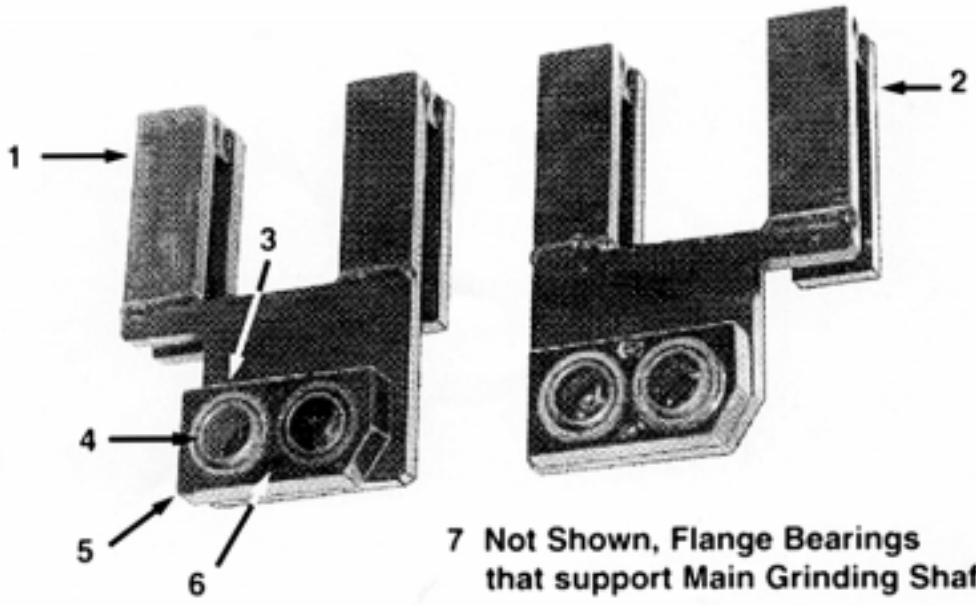
New Style Relief Hub & Drive for 500SR Grinding Wheel and Hub



Important: When installed on the machine, the nut must be on the left side as you face the machine from the operator's position.

Item #	Part #	Description	Qty
		Spin Grinding Wheel and Hub	
1	5710	Wheel, Grinding, 6 OD x 2.75 ID x 1.5 Thick	1
2	50039	Hub	1
3	50037	Nut	1
		Relief Grinding Wheel and Hub	
1	5711	Wheel, Grinding, 6 OD x 2.75 ID x .5 Thick	1
2	50200	Hub	1
3	50201	Nut	1
	50014	Wrench for 50037 and 50201 (Not Shown)	

New Style Relief Hub & Drive for 500SR
Hub Support Shaft Supports

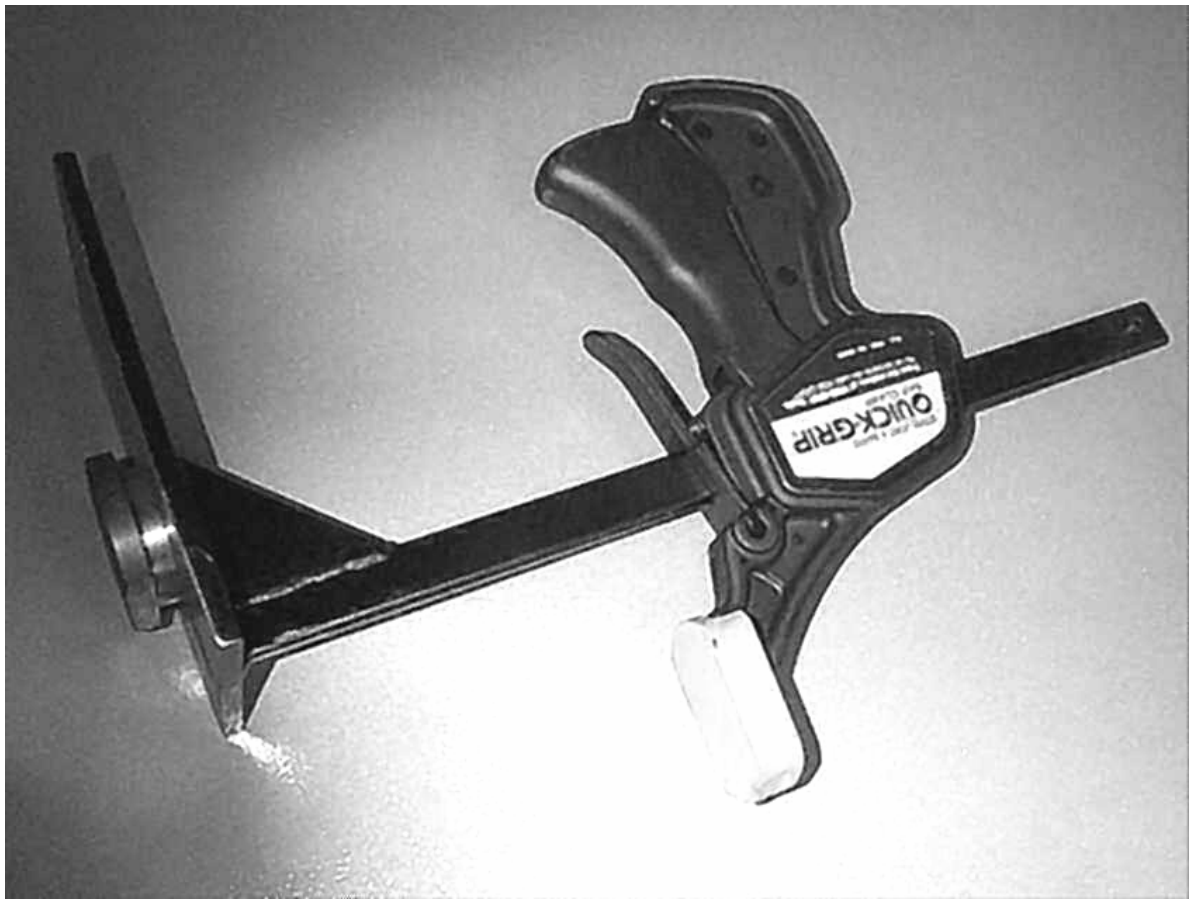


7 Not Shown, Flange Bearings that support Main Grinding Shaft

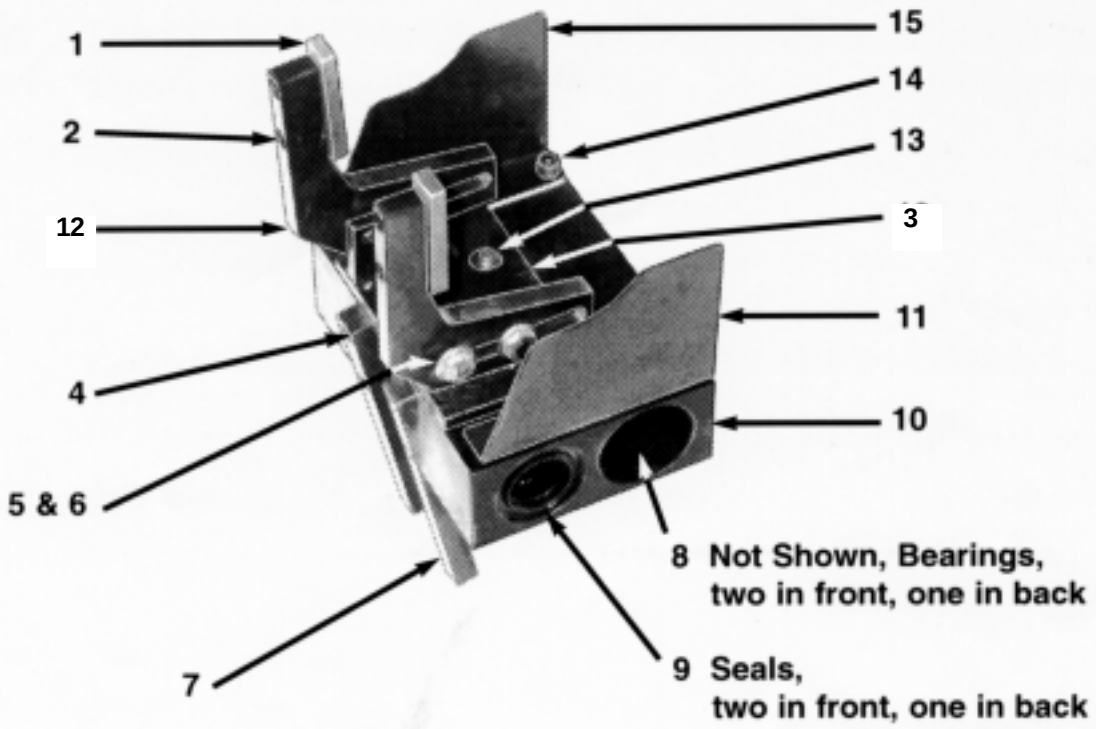
8 Not Shown, Screws that hold Supports to Side Arms

Item #	Part #	Description	Qty
1	50210	Hanger, LH	1
2	50211	Hanger, RH	1
3	9232	Screw, Socket Set 10-24 x.25	4
4	9680	Bearing, Torrington 10 SF 16	4
5	50213	Housing, Bearing	2
6	9985	Screw, Socket Head Cap 10-24 x 1.0	4
7	9414	Bearing, Fafnir SCJT 1-1/4"	2
8	9549	Screw, Button Head 1/2-13 x 1.75	4

Rear Roller Clamp 50254

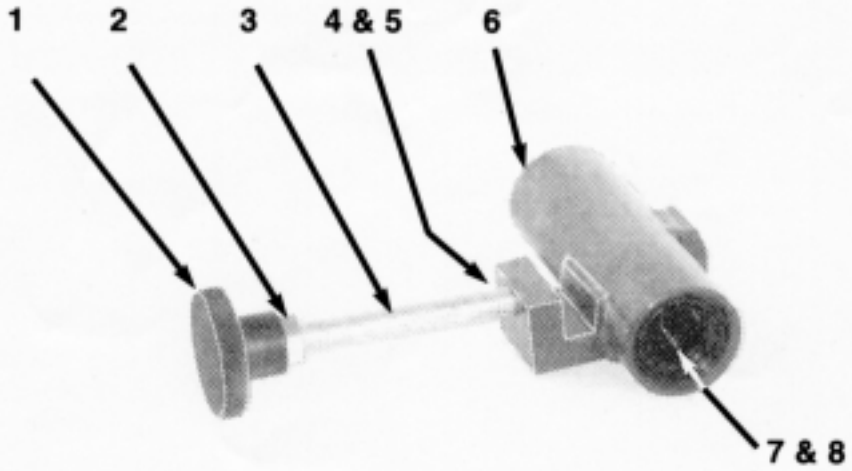


New Style Relief Hub & Drive for 500SR
Grind Hub Drive



Item #	Part #	Description	Qty
1	50073	Wear Pad	2
2	9230	Screw, Socket Head Cap 10-24 x .62	4
3	50203	Support, Spin Yoke	1
4	9261	Screw, Socket Head Cap 10-24 x .38	4
5	9057	Washer, Flat SAE 1/4	4
6	9895	Screw, Hex 1/4-20 x .62	4
7	50214	Bar, Traverse Support	2
8	9404	Bearing, Linear Thompson Super 16DD	3
9	9479	Seal	4
10	50202	Housing, Travel	1
11	50223	Guard, RH	1
12	50204	Yoke, Spin	2
13	9544	Screw, Button Head 1/4-20 x .75	2
14	9285	Screw, Socket Head Cap, 1/4-20 x .5	4
15	50224	Guard, LH	1

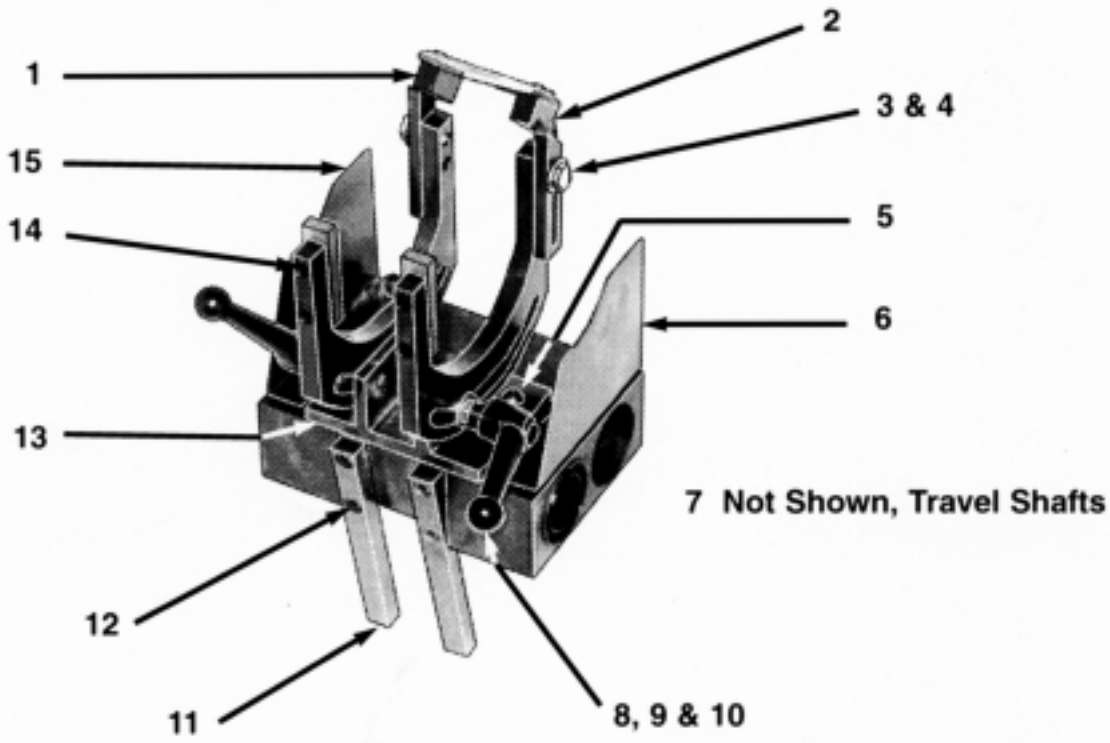
New Style Relief Hub & Drive for 500SR Travel Housing



There are two of these assemblies on a Model 500SR

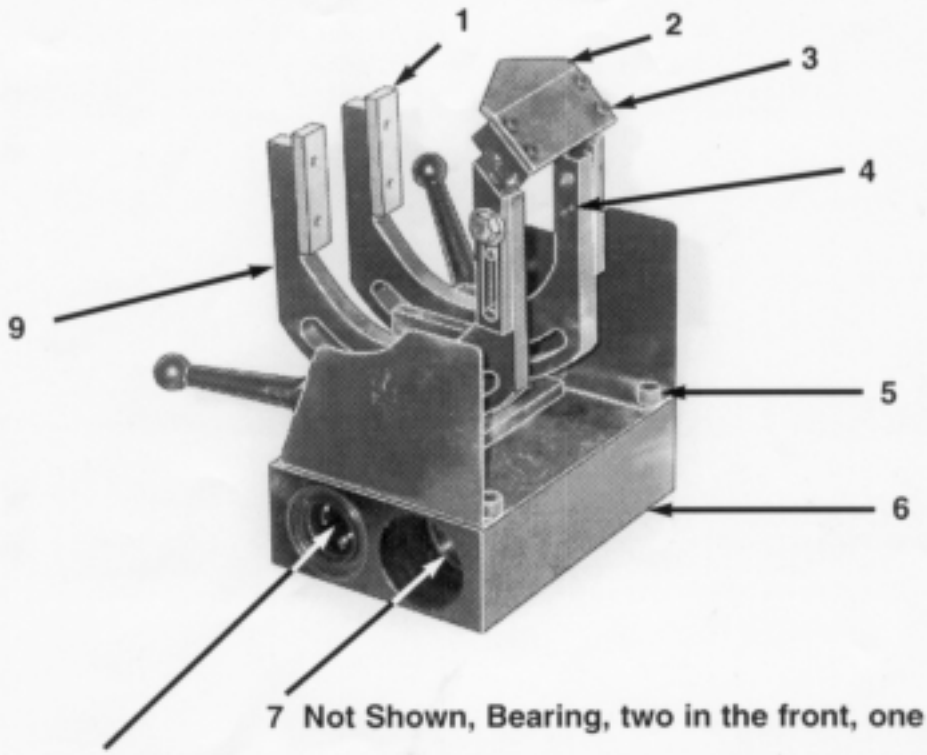
Item #	Part #	Description	Qty
1	9442	Knob	2
2	9001	Nut	2
3	9851	Rod	2
4	50044	Wear Pad	2
5	9208	Set Screw	2
6	50215	Travel Housing	2
7	9404	Bearing	4
8	9276	Retaining Ring	4

New Style Relief Hub & Drive for 500SR
Relief Hub Drive, Front View



Item #	Part #	Description	Qty
1	50209	Support, LH	1
2	50206	Support, RH	1
3	9895	Screw	2
4	9057	Washer	2
5	9544	Screw	2
6	50223	Guard, RH	1
7	50207	Shaft, Travel	2
8	9496	Knob	2
9	9894	Rod	2
10	9016	Nut	2
11	50214	Bar	2
12	9261	Screw	4
13	50212	Support	1
14	9231	Screw	4
15	50224	Guard, LH	1

New Style Relief Hub & Drive for 500SR
Relief Hub Drive, Back View

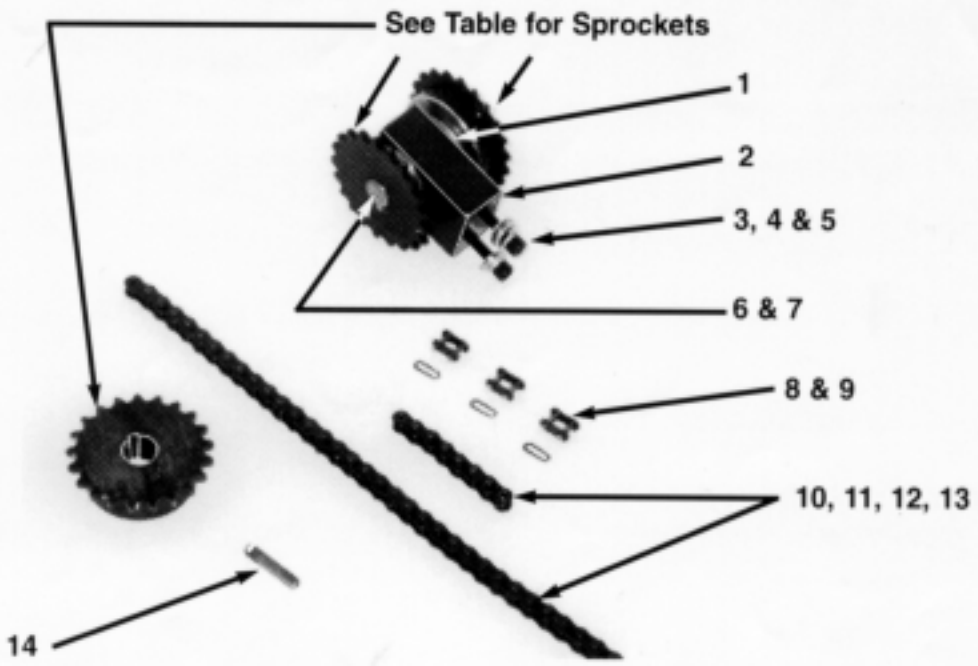


7 Not Shown, Bearing, two in the front, one in the back

8 Not Shown, Seal, two in the front, two in the back

Item #	Part #	Description	Qty
1	50073	Pad, Wear	2
2	50208	Guide	1
3	9229	Screw	4
4	9689	Pin	4
5	9285	Screw	4
6	50202	Housing	1
7	9404	Bearing	3
8	9479	Seal	4
9	50205	Yoke, Relief	2

New Style Relief Hub & Drive for 500SR Travel Sprockets



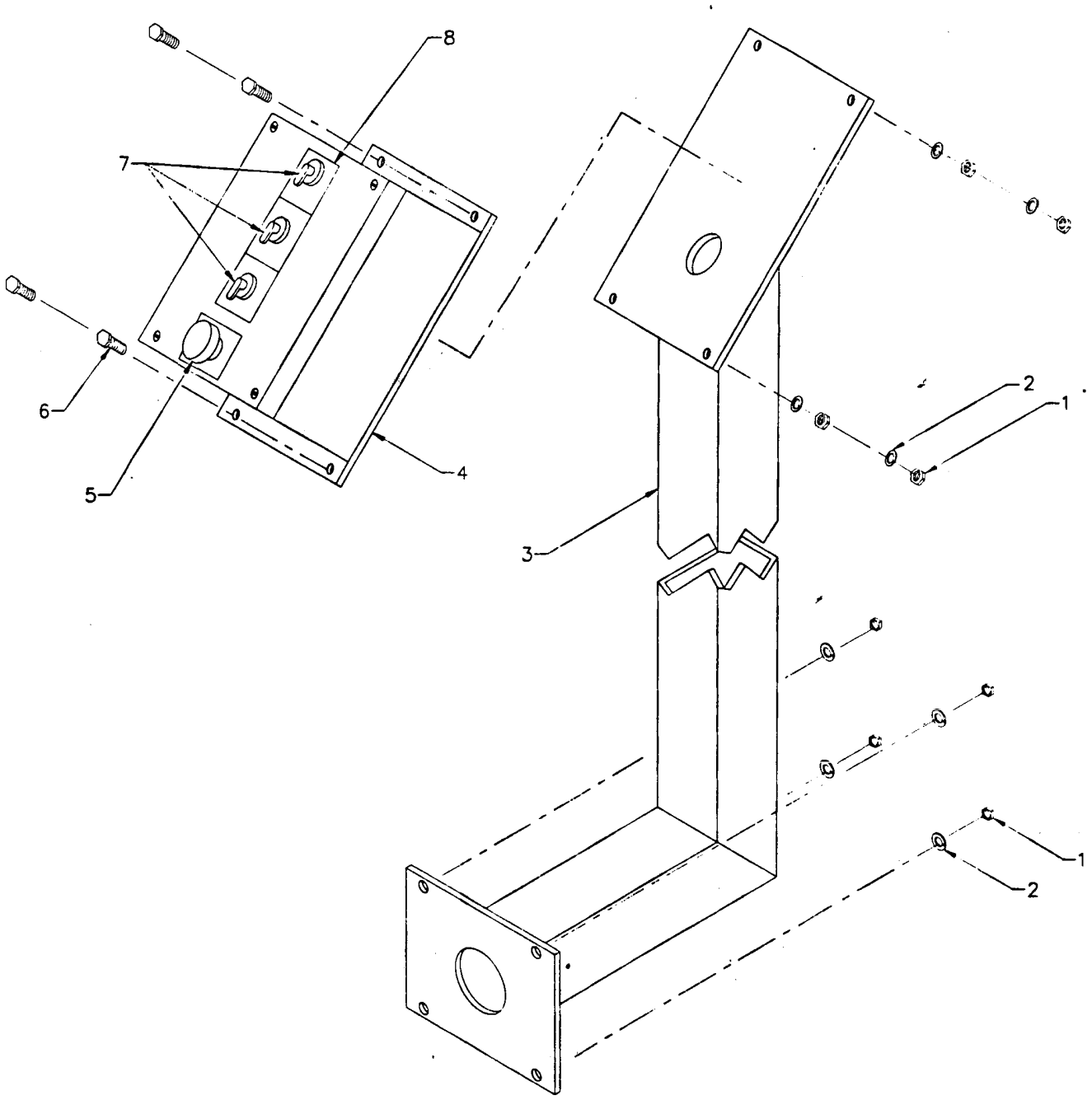
Item #	Part #	Description	Qty
1	9882	Washer	2
2	50219	Block	1
3	9536	Screw	2
4	9057	Washer	See Note 2
5	9061	Washer	2
6	50220	Shaft	1
7	17104	Key	2
8	9890	Link, Master	2
9	80122	Link, Offset	As Required
10	9406	Chain, RC35 x 299 Pitches, includes master & offset link, 500SR and 500ASR	1
11	80123	Chain, RC35 x 291 Pitches, includes master & offset link, 500S only	1
12	80124	Chain, RC35 x 34 Pitches, includes master link, 500SR and 500ASR	1
13	80125	Chain, RC35 x 8 Pitches, includes master link, for converting 500S to 500SR	1
14	80126	Key, 3/16 x 1	1

Note 1: Sprockets, Neary uses 5 different RC35 x 21 tooth sprockets on the Model 500 for different purposes, please check the hub width and diameter, and the bore, then select from the following part numbers.

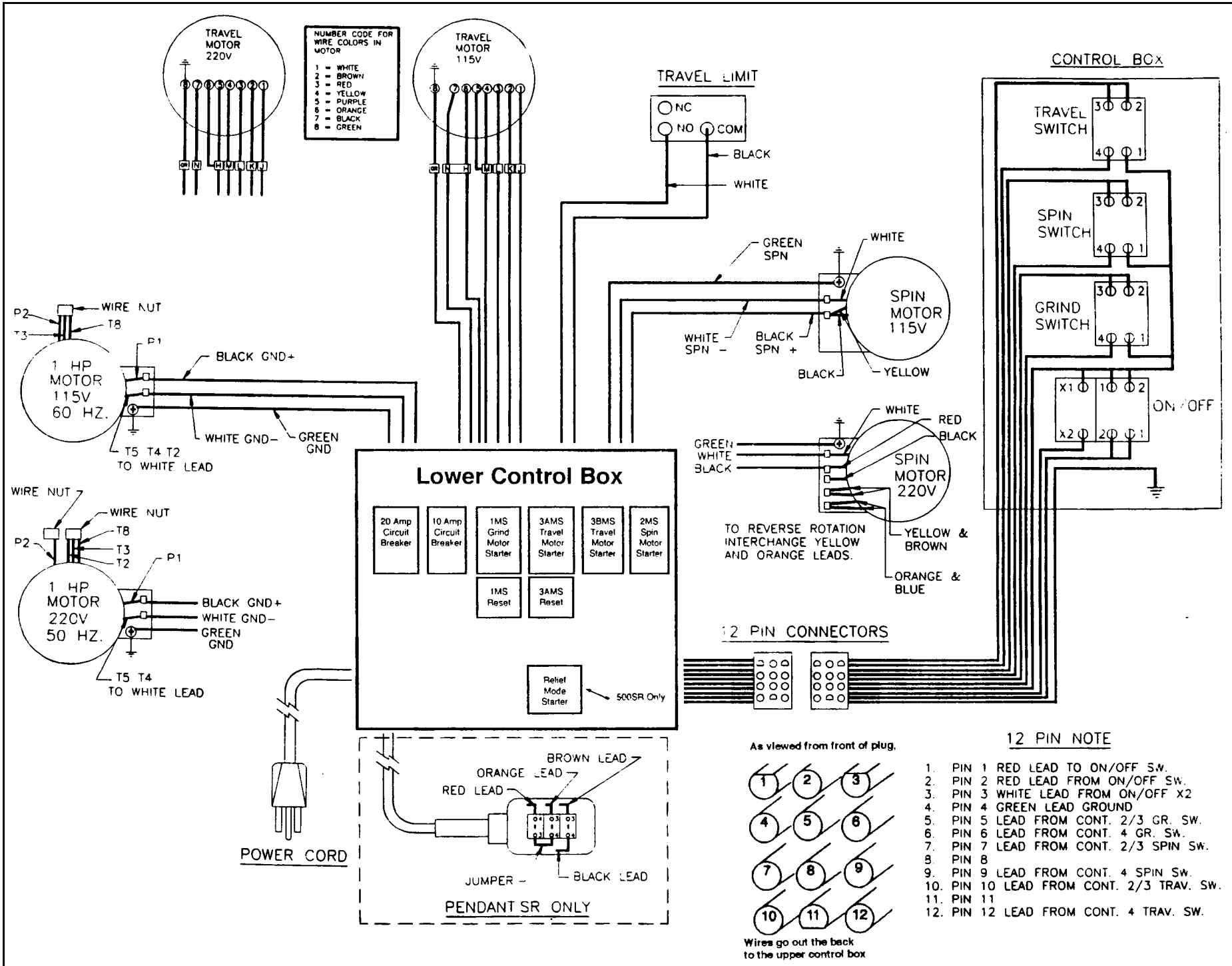
15	9407	Sprocket, RC35B21 x .62 Bore x .812 Thick x 2.12 Hub Diameter with Keyway, 500SR/ASR Motor Shaft
16	50102	Sprocket, RC35B21 x .62 Bore x .812 Thick x 2.12 Hub Diameter with Oilite Bearing, Left Side
17	50180	Sprocket, RC35B21 x 1.0 Bore x .812 Thick x 2.12 Hub Diameter, 500S Travel Motor Shaft
18	50221	Sprocket, RC35B21 x .62 Bore x .600 Thick x 2.12 Hub Diameter with Keyway, 500SR Jackshaft Outer
19	50222	Sprocket, RC35B21 x .62 Bore x .600 Thick x 1.50 Hub Diameter with Keyway, 500SR Jackshaft Inner

Note 2: Prior to September, 1996, these washers were used to adjust for variations in chain length. The new design has an adjustment for chain length at the travel sprocket on the left side of the machine.

EXPLODED VIEW & PARTS LIST—CONTROL BOX ARM ASSEMBLY



ITEM NO.	PART NO.	PART NAME	QTY.
1	9014	Hex Nut 1/4-20	8
2	9061	Locking Washer 1/4″	8
3	50134	Switch Support Arm	1
4	50139	Electrical Control Box	1
5	9466	Push Pull On/Off Switch	1
6	9142	Hex Cap Screw 1/4-20 x 3/4″	4
7	9467	Three Pos Sel Switch	3
8	9435	Decal	1



12 PIN NOTE

1. PIN 1 RED LEAD TO ON/OFF SW.
2. PIN 2 RED LEAD FROM ON/OFF SW.
3. PIN 3 WHITE LEAD FROM ON/OFF X2
4. PIN 4 GREEN LEAD GROUND
5. PIN 5 LEAD FROM CONT. 2/3 GR. SW.
6. PIN 6 LEAD FROM CONT. 4 GR. SW.
7. PIN 7 LEAD FROM CONT. 2/3 SPIN SW.
8. PIN 8
9. PIN 9 LEAD FROM CONT. 4 SPIN SW.
10. PIN 10 LEAD FROM CONT. 2/3 TRAV. SW.
11. PIN 11
12. PIN 12 LEAD FROM CONT. 4 TRAV. SW.

Neary Model 500 Electrical Components

Model 500S, 501S, 500SR, 501SR
For 500ASR and 501ASR, see following pages

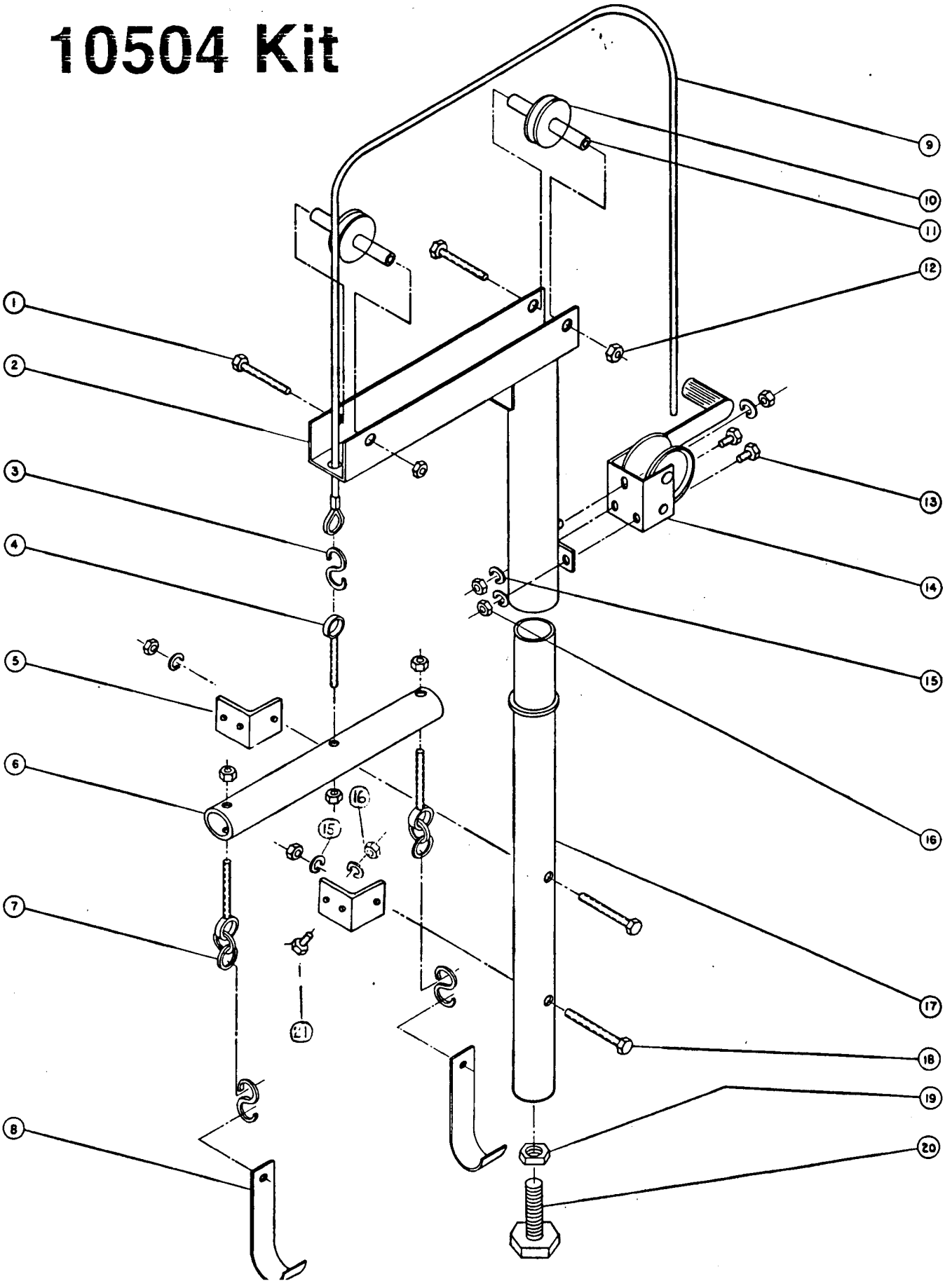
Item #	Part #	Description	500S	501S	500SR	501SR
	50538	Box, Control, Lower 110V 60HZ "500S" only	1			
	55538	Box, Control, Lower 110V 60HZ "500SR" only			1	
	55546	Box, Control, Lower 220V 50HZ "501S" only		1		
	55537	Box, Control, Lower 220V 50HZ "501SR" only				1
	55539	Box, Control, Upper 110V 60HZ	1		1	
	55549	Box, Control, Upper 220V 50HZ		1		1
	80059	Breaker, 10 Amp Circuit 220V D Curve MH24506		1		1
	80060	Breaker, 20 Amp Circuit 110V D Curve MH24509	1		1	
	80061	Breaker, 10 Amp Circuit, 110/220V C Curve MHZ4432	1	1	1	1
	80062	Bulb, Power Switch, 110 & 220V	1	1	1	1
	9438	Connector Terminal, Female	12	12	12	12
	9439	Connector Terminal, Male	12	12	12	12
	9437	Connector, 12 Pin Female	1	1	1	1
	9436	Connector, 12 Pin Male	1	1	1	1
	9356	Motor, Grind 1 HP 110V 60HZ	1		1	
	9393	Motor, Grind 1 HP 220V 50HZ		1		1
	9652	Motor, Spin, 110V 60 HZ or 220V 50HZ	1	1	1	1
	9457	Motor, Travel, 110V 60HZ or 220 50HZ	1	1	1	1
	55525	Pendant			1	1
	80063	Starter, 1MS Grind Motor 110V	1		1	
	80064	Starter, 1MS Grind Motor 220V		1		1
	80065	Starter, 2MS Spin Motor 110V	1		1	
	80066	Starter, 2MS Spin Motor 220V		1		1
	80067	Starter, 3AMS Travel Motor 110V	1		1	
	80068	Starter, 3AMS Travel Motor 220V		1		1
	80069	Starter, 3BMS Travel Motor 110V	1		1	
	80070	Starter, 3BMS Travel Motor 220V		1		1
	80071	Starter, Relief Mode 110V			1	
	80072	Starter, Relief Mode 220V				1
	9467	Switch, Control, Grind	1	1	1	1
	9467	Switch, Control, Spin	1	1	1	1
	9467	Switch, Control, Travel	1	1	1	1
	9466	Switch, Main Power, On/Off 110V	1		1	
	80073	Switch, Main Power, On/Off 220V		1		1
	9415	Switch, Travel Limit	1	1	1	1

Service Recommendation:

1. Check the easy things first
2. Disconnect the power, unplug the machine
3. Check for loose connections, tighten all screws
4. Check the starters to make sure they move in and out or back and forth
5. Read the section of the manual regarding service and adjustments

EXPLODED VIEW—OPTIONAL ELEVATOR ASSEMBLY 500S, SR, ASR

10504 Kit



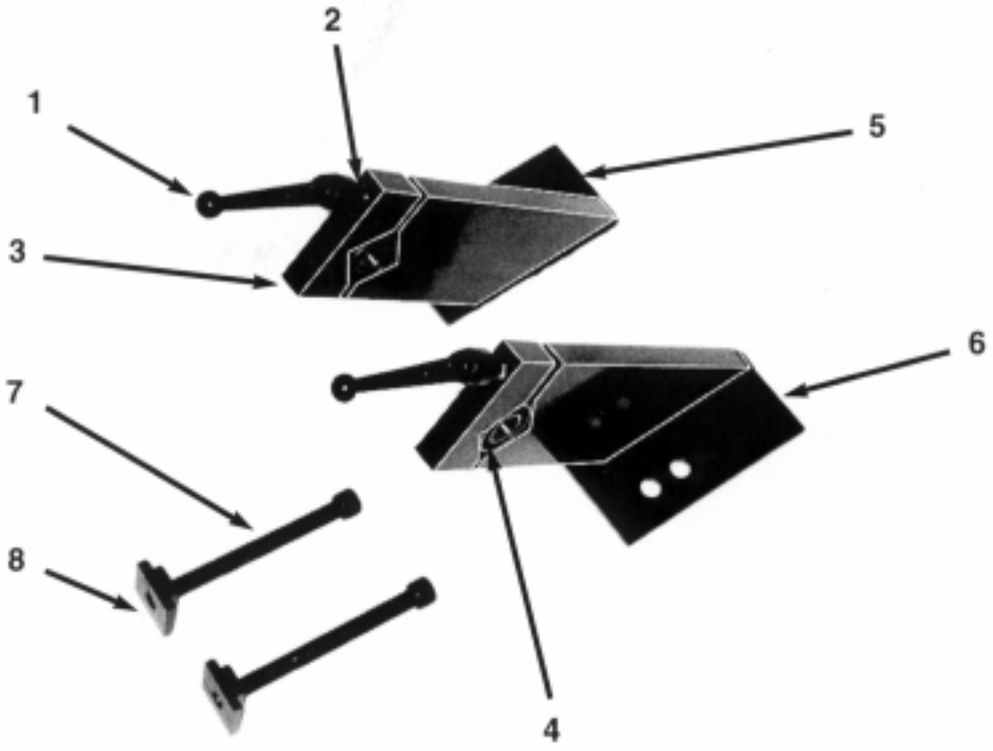
10504 Elevator Kit

Item #	Part #	Description	#/Kit
	10504	Elevator, includes items 1-2	
1	9100	Screw	2
2	10040	Hoist, upper frame	
3	9256	S Hook	3
4	9255	Bolt, Eye	3
5	17062	Spacer	2
6	10042	Bar	1
7	9320	Chain, 7"	2
8	10043	Hook	2
9	9317	Cable	1
10	9318	Pulley	2
11	10041	Spacer	2
12	9009	Nut	2
13	9101	Screw	2
14	9319	Winch	
15	9050	Washer	10
16	9002	Nut	10
17	17239	Base, Hoist	1
18	9116	Screw	2
19	9001	Nut	1
20	9313	Foot	1
21	9104	Screw	4

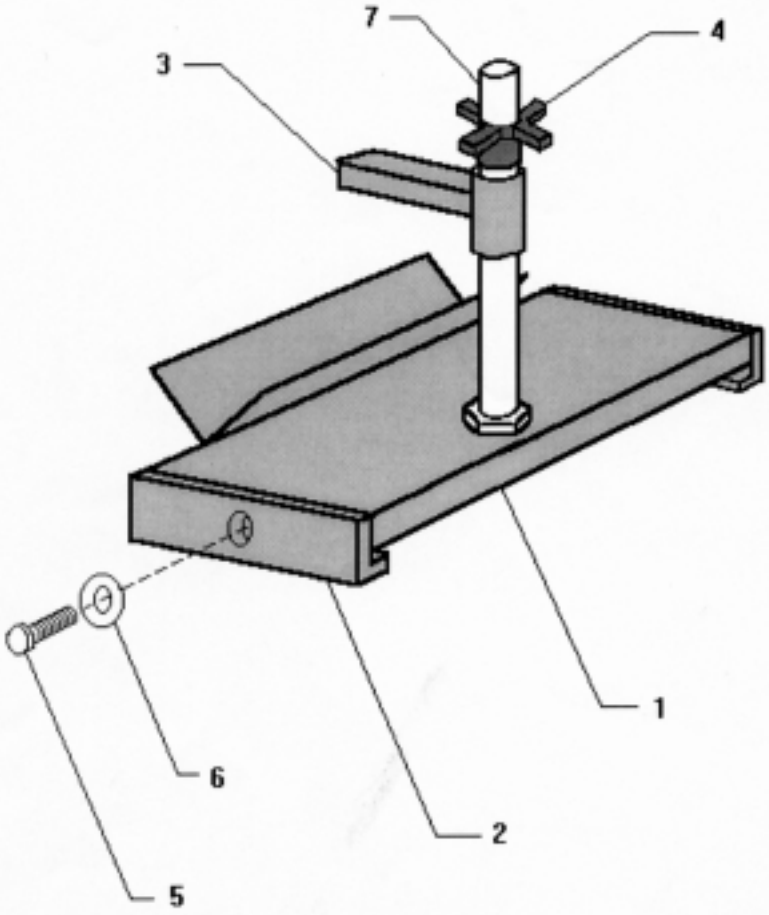
50517 Reel Mount Kit for Model 500

Replaces 55508 and 50506 Kits 11/2/96

Item #	Part #	Description	#/Kit
	50517	Kit, Reel, for 500/501 includes item 1-8	
1	9632	Handle	2
2	9002	Nut	2
2	9872	Rod, Threaded	2
3	17201	Clamp	2
4	9871	Bearing, General 22612-88	2
5	50230	Support, LH	1
6	50231	Suport, RH	1
7	9504	Screw	2
8	56069	Tee Nut	2



NEARY FRONT ROLLER MOUNTING BRACKETS (Part #50505)
-ALLOW FOR QUICK AND EASY MOUNTING OF FRONT ROLLERS!



Parts List: Roller Mounting Brackets (Part # 50505)

ITEM NO.	PART NO.	PART NAME	QTY.
1	50240	Front Roller Mount	2
2	50241	Roller Mount Lock	4
3	50242	Roller Clamp	2
4	9853	Locking Knob	2
5	9104	Hex Head Cap Screw 3/8-16x1"	4
6	9058	Flat Washer 3/8"	4
7	17119	1/2-13x61/2" Threaded Rod	2

55578 500SR Dust Collection Kit

This kit fits the 500SR with the two rail system for the traverse dirve for the grinding hubs.

Includes:

One	09818	Vacuum
Two	50252	Collector
One	50253	Tee
Three	80035	Clamp
One	55243	Bracket
One	B251201	Screw - Hex Head 1/4 -20 x 3/4 long

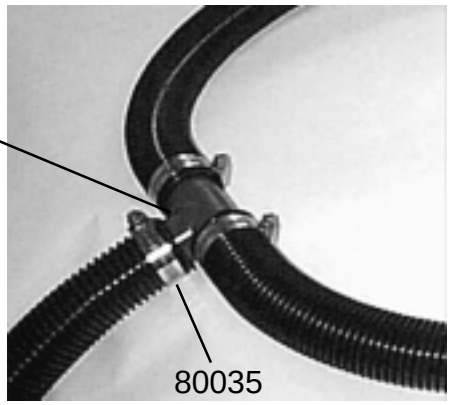


Fig. 94

Installation

1. Install the vacuum at a convenient place under the 500SR.
2. Move the main grinding shaft to its lowest position.
3. Install the dust collectors by removing the two back screws from the aluminum block that supports the drive yoke for the main grinding hub. Insert the dust collector from the bottom and reinstall the screws.
4. Repeat for the relief hub.
5. Install the 55243 Bracket to the switch bar using the B251201 screw. It must be on the right side of the switch bar as you face the machine. It should be 3-5/8"from the frame. See Fig. 97
6. Cut the hose, two pieces 28" long with the remaining piece approximately 57" Long.
7. Install the 28" hoses by twisting them into one of the dust collectors. Install the other end to the tee using the clamps.
8. Install the 57" hoses from the vacuum to the tee using the third clamp.

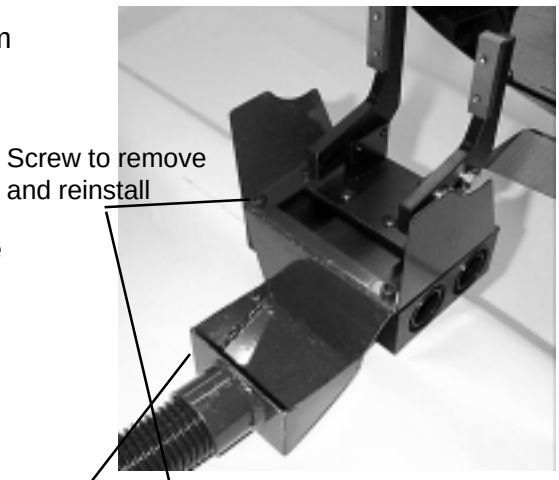


Fig. 95

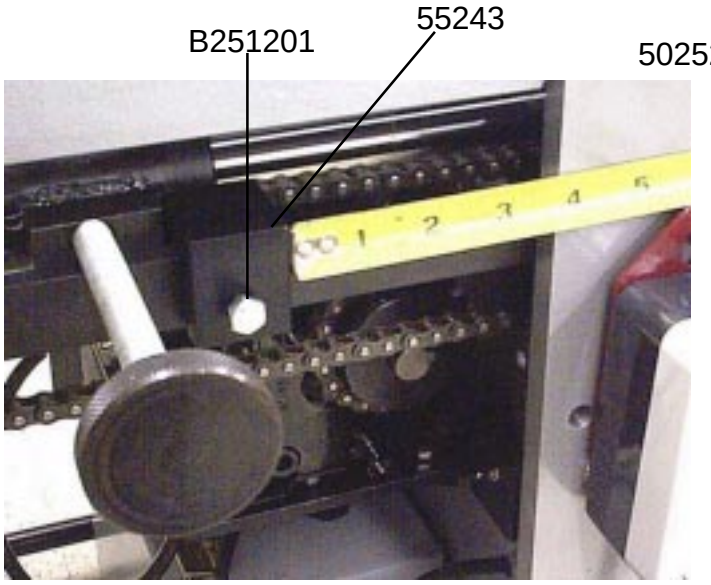


Fig. 97

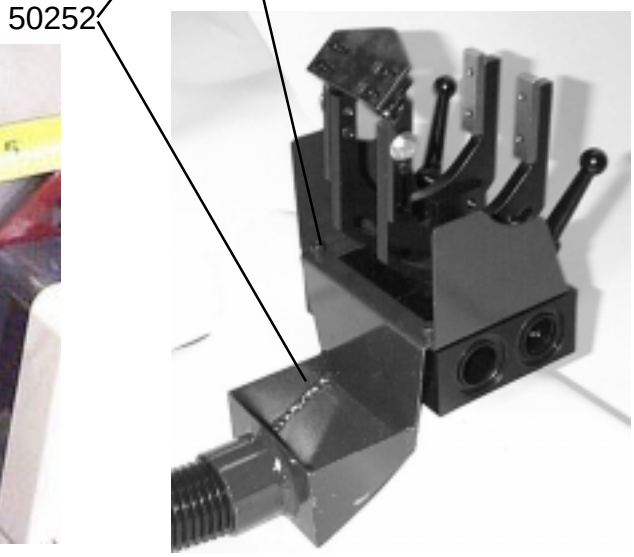


Fig. 96